

Tasmanian Year Book



1967

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TASMANIAN YEAR BOOK

No. 1 — 1967

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and

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Commonwealth Bureau of Census and Statistics

Tasmanian Office, Hobart

1967

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PREFACE

Although this volume is entitled *No. 1*, it is not claimed that it is the first Tasmanian Official Year Book. The credit for producing the first belongs to R. M. Johnston, the Government Statistician, whose "*Tasmanian Official Record*" appeared for the years 1890, 1891 and 1892. Lack of adequate resources unfortunately prevented the continuance of that publication. It was not until 1964 that work could be commenced on this volume, and the long interval since Johnston's last volume (75 years) is the justification for the considerable amount of historical material contained herein.

The lack of an Official Year Book during most of Tasmania's recorded history has been met, in some degree, by other official statistical publications, the principal of which are the annual "*Statistics of the State of Tasmania*" and "*Pocket Year Book of Tasmania*", and by "*Walch's Tasmanian Almanac (The Red Book)*", published by J. Walch and Sons Pty. Ltd. and now in its 103rd year of publication. The "*Statistics of the State of Tasmania*" is a comprehensive volume of statistics collected and compiled by the Bureau, presented in detailed form but without associated descriptive or background information. The "*Pocket Year Book*" is substantially a condensation of the statistics contained in the "*Statistics of the State of Tasmania*" into short summary form with brief descriptive material of general interest. "*Walch's Tasmanian Almanac*", on the other hand, is mainly a detailed guide to personalities, institutions, organisations, &c., but also contains much interesting and useful general information.

The Year Book has not been written as a substitute for any of these publications, all of which will continue to fulfill a proper role. It may be regarded rather as complementary to them, the aim being to concentrate in the one publication all available statistical data (in rather less detail than in the "*Statistics of the State of Tasmania*", but not in as condensed form as in the "*Pocket Year Book*") together with adequate interpretative comment and appropriate background information. The Year Book, therefore, provides a wide general reference on all the more important aspects of the economic and social life of the State. For detailed study on particular subjects, however, other publications will usually be more appropriate and attention is directed to Appendix A where the various publications of the Bureau are described.

It should be appreciated that the year 1967 in the title of this volume refers to the year of issue. Preparation of the manuscript commenced in 1964 and, as a result, it has not been possible to take data in some of the tables beyond 1964. It is anticipated, however, that in subsequent issues data will be included closer in time to the year of issue.

In subsequent issues it is planned to retain a structure of basic information which will be revised annually, to reduce the historical content and to feature more special articles.

I gratefully acknowledge the valuable assistance given by officers of the various Commonwealth and State Departments and by others who have contributed information, often at considerable trouble. Especially would I like to thank Mr. W. E. Kallend, B.A., Editor of Publications, who has edited all

contributed material and prepared the balance of the subject matter; the historical prefaces introducing many subjects are also the result of his research. The help of the Surveyor-General in providing the maps has been greatly appreciated and thanks are due also to those supplying photographs. Finally I should express my appreciation to the Government Printer and his staff for their enthusiasm and co-operation in printing this volume.

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Commonwealth Bureau of Census and Statistics,
HOBART, January, 1967.

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AUSTRALIAN DECIMAL CURRENCY

DOLLAR (\$)/CENT (c) SYSTEM

On February 14, 1966, under the *Currency Act* 1965, a dollar/cent decimal currency system, with one dollar equal to 100 cents, was introduced in Australia.

The relationship between pounds, shillings and pence, and dollars and cents, as prescribed in the Act, is as follows:

1 pound = 2 dollars
1 shilling = 10 cents
1 penny = 5/6 cents.

In this volume, monetary amounts have been converted to the equivalent amounts in the new system.

Chapter 1

HISTORY AND CHRONOLOGY

DISCOVERY

The Period of Dutch Exploration

In the authors of antiquity, references are found to a land called "Terra Australis" but it is the Dutch who are credited with the discovery of both Australia and Tasmania. The Dutch, with their trading posts in Java, represented the closest extension of European sea power near the north of the unknown continent and its discovery, either by accident or design, became inevitable.

In 1606, Captain William Jansz in the *Duyfken* was sent from Java to explore the islands of New Guinea and, crossing Torres Straits unawares, coasted along the west of Cape York Peninsula; this was the first of a series of voyages by Dutch captains who, in the next thirty years, acquired some knowledge of the western shores of the unknown land. Not all voyages were undertaken with the aim of exploration—Dirk Hartog's long journey along the western shore of Australia in 1616 resulted from his sailing too far east on the route from the Cape of Good Hope to Java. Some later captains on the same route even regarded the western Australian coast as a suitable landfall before turning north for Java—a commentary on the difficulty of navigation when longitude had to be established by dead reckoning.

In 1642, the Dutch East India Company despatched from Java an expedition of two vessels, the *Heemskirk* and *Zeehan*, under Captain Abel Tasman, with instructions to investigate the extent of the unknown land thought to exist between New Guinea and the coast of western Australia. One immediate aim of the Governor General, Anthony Van Diemen, was to find a southern route from Java to Chile so that ships of the company could either trade or plunder along the Pacific coast of South America; a question to be resolved was whether any land mass extending far south blocked such a route.

The original plan was to sail west to Mauritius, to run down to 52° or 54° South latitude and then to proceed east; assuming no land was discovered, it was then intended to turn north in either the longitude of eastern New Guinea or possibly of the Solomons. If Tasman had followed this plan in every detail, he might have discovered the east coast of Australia, anticipating Cook's work by more than a century. As it turned out, the extreme southern latitudes were too hostile and accordingly Tasman was sailing east in latitude 42° South when he sighted the mountainous west coast of Tasmania on 24th November, 1642.

The Dutch navigator skirted the south coast and made a landing on the east coast for water in Blackman Bay (from an anchorage south of Marion Bay). He then sailed north to St. Patrick's Head, crossed the Tasman sea and discovered New Zealand, returning to Java by a route to the north of New Guinea. Tasman had thus performed the feat of circumnavigating Australia in a single voyage without once sighting the Australian continent.

In honour of the Governor General of the Indies, he named the first discovery Van Diemen's Land, imagining it to be the most southern extension of the Australian continent, an illusion that was only completely dispelled by Bass and Flinders when they circumnavigated the island in 1798. The Dutch did not follow up the discoveries of Tasman or their other explorers because they were interested in establishing trading posts only among peoples with a higher degree of civilisation than the natives of Tasmania or Australia appeared to possess. (Tasman's crew saw no natives in Tasmania but inferred their existence from sounds, cuts in trees and the smoke of fires.)

The Period of British and French Exploration

One hundred and thirty years passed before Tasmania was visited again, this time by the French navigator Marion du Fresne in 1772; he virtually repeated Tasman's original landfall, skirted the south coast and came to anchor in the bay that bears his name (Marion). His visit is memorable for the first contact between Europeans and Tasmanians and for the slaying of the first native by gunfire. Du Fresne himself was killed by Maoris in New Zealand on the same voyage.

A year later, Captain Tobias Furneaux in the *Adventure* became separated from Captain Cook in the *Resolution* on the route to New Zealand, and made for Tasmania to obtain water. He eventually anchored off Bruny Island in Adventure Bay but mistakenly believed himself to be in the area of Tasman's original landing which was at least forty five miles to the north-east. From this original error sprang a confusion in nomenclature which persists to this day (e.g. Frederick Henry Bay, first named in Tasman's record, appears on maps in an area that Tasman did not even see). Furneaux then sought to investigate the possibility of a strait separating Tasmania from the continent recently explored by Cook but shoals in the islands bearing his name (Furneaux Group) caused him to desist and make for New Zealand.

In 1777, Cook, on his third voyage, used the Adventure Bay anchorage without detecting Furneaux's navigational errors.

The settlement at Port Jackson in N.S.W. in 1788 put Tasmania on a major sailing route, the first fleet passing south of the island on its way. To have sailed north of the island would have invited shipwreck on the Australian "mainland" of which Tasmania was then believed to be part. In the same year, Captain William Bligh put in to Adventure Bay with the *Bounty* on his way to Tahiti and to the famous mutiny; he had been on Bruny Island before as Cook's sailing master.

Captain Cox of the *Mercury* anchored in the bay known as Cox's Bight in 1789, charted some of the south coast and explored the strait between Maria Island and the east coast.

The next visitor (1792) was Admiral Bruny D'Entrecasteaux commanding *Recherche* and *Esperance* and searching for La Perouse who had not been heard of since 1788 when he sailed from Botany Bay. The Admiral made up from the south, hoping to anchor in Adventure Bay, but a navigational error put his ships too far west with the happy result that he discovered the magnificent channel separating Bruny Island from the Tasmanian mainland, and was the first to sail up the Derwent River. Leaving Tasmania, the expedition sailed as far west as Cape Leeuwin in western Australia when it became imperative to take on water. It is an indication of the lack of knowledge then available that D'Entrecasteaux had to return to Adventure Bay to fill his casks. In the same year, Bligh put in to Adventure Bay on his way to obtain breadfruit trees in the Pacific for transplanting in the West Indies.

The year 1794 was notable for the visit of Commodore John Hayes who had sailed from India with the *Duke of Clarence* and *Duchess*; he explored the Derwent as far as Mt. Direction and named Risdon, later to be the site of the first settlement.

Tasmania an Island

Two voyages now followed which established that Tasmania was an island. Surgeon George Bass in a whaleboat left Port Jackson in 1797, rounded Wilson's Promontory and discovered Western Port. The nature of tides and swells encountered told Bass that here was no bay but rather a strait of considerable magnitude. Lieutenant Flinders held a contrary opinion, however, thinking that a land-bridge was necessary to explain the presence of natives in Tasmania. In 1798, Bass and Flinders were given the sloop *Norfolk* to decide the question for all time and they circumnavigated the island, commencing on a westerly course along the north coast where they discovered the Tamar estuary.

Fear of the French

In the original annexation of Australian territory by Cook in 1770, Tasmania was excluded since the southern limit was proclaimed as 38° South latitude. Formal possession of Tasmania had been taken by Governor Phillip on 26th January, 1788, when he read his commission to the people of the First Fleet at Sydney Cove. Now that it was established that Tasmania was an island, the authorities both in London and Sydney felt that some steps should be taken to block the French from making any claims to possession. The urgency of doing this was underlined by the arrival in D'Entrecasteaux channel of Admiral Baudin with the *Geographe* and *Naturaliste* in 1802. The expedition's navigator, Freycinet, charted Tasman and Forestier peninsulas and correctly identified the Frederick Henry Bay of the Dutch era. The expedition then called at Port Jackson before sailing south into Bass Strait where it was intercepted at King Island by Lieutenant Robbins in the *Cumberland*. Announcing his intention boldly to the French Admiral, the Lieutenant then disembarked his small company and formally annexed the island in the name of King George III. Governor King at Port Jackson who gave Robbins his instructions was not satisfied that merely formal acts of annexation would block the French indefinitely and decided that permanent settlements were required if British sovereignty were to be retained. To this decision can be attributed the settlement at Risdon (1803) and the Hobart and Port Dalrymple settlements of 1804.

Geography of the Original Landing

The latest map published by the Tasmanian Lands and Surveys Department (1:250,000) makes easy the recognition of Tasman's landings on the east coast. His anchorage was near Visscher Island while the first landing was made by longboats which passed through the narrows into Blackman Bay. The second landing occurred in the south-east of North Bay where a lagoon proved to be too brackish for filling water casks.

The last landing was made near Tasman Bay where the navigator had hoped to plant the flag of his Prince and take formal possession of the new land. The surf being too rough to get the longboat ashore, the carpenter swam through the waves, planted the flag and then fought his way back to the longboat.

SETTLEMENT

The First Settlement at Risdon (1803)

It will be observed that the original explorers of the island (including the French) had very largely concentrated their attention on the south-east and, in particular, on the sea approaches to the Derwent. Faced with the necessity for establishing a settlement to assert British sovereignty, Governor King had a number of possible sites to consider, including King Island, Port Phillip and Port Dalrymple (the Tamar Estuary). His eventual choice was the area of the Derwent and he reported his intention to the Admiralty as follows:—

“My reasons for making this settlement are the necessity there appears of preventing the French gaining a footing on the east side of these islands; to divide the convicts; to secure another place for obtaining timber with any other natural productions that may be discovered and found useful; the advantages that may be expected by raising grain; and to promote the seal fishery.”

Commissioned to make the Derwent settlement, Lieutenant John Bowen sailed from Sydney with the *Albion* and *Lady Nelson*; the two vessels became separated in a gale but both were at anchor at Risdon by 12th September, 1803 when Bowen went ashore. The slenderness of Governor King's resources is apparent from the fact that the settlers—free, convict and military—only numbered 49 and that the *Albion* was a British whaler under temporary charter (she caught three sperm whales on the voyage while becalmed).

The responsibility for the choice of the Risdon site attaches ultimately to Bass who had made detailed investigations of the Derwent in 1798 from the *Norfolk*. He had reported as follows:—“The land at the head of Risdon Creek, on the east side, seems preferable to any other on the banks of the Derwent”. It was not surprising, therefore, that Bowen's commission from Governor King directed him to locate the new settlement in the Risdon area. In actual fact, the site ultimately proved unsuitable due to the inadequate stream and the poor landing place; these handicaps were aggravated by the wretchedness of the human material at Bowen's disposal, a characteristic not altered when the camp was increased to nearly 100 persons.

If the settlement has any claim to fame, it derives from an encounter with natives who descended on the camp on a hunting expedition and who were fired on by the soldiers in a state of panic. Whether the future barbarities of inter-racial war could have been avoided is an open question but this encounter was the first phase of a struggle that ended in the extinction of a race.

The final act of the Risdon Settlement was played on 9th August, 1804 when the *Ocean* sailed for Port Jackson with Lieutenant Bowen and most of his people; Lieutenant-Governor Collins at the new settlement at Hobart had decided to close down the Risdon camp and held such a low opinion of these early colonists that he retained only thirteen convicts and one free settler.

The Settlement At Hobart (1804)

If Lieutenant-Colonel Collins had carried out his original instructions, then Hobart today might have been the name of the capital of Victoria situated on Port Phillip Bay. The British Cabinet, impressed by Governor King's warnings on possible French penetration, decided to carry out the occupation of Port Phillip direct from Britain and, to this end, commissioned Lieutenant-Colonel Collins (Royal Marines) to command an expedition in the *Calcutta* with the *Ocean* as tender. The settlers eventually arrived, via

Rio De Janeiro and the Cape of Good Hope, and formed a temporary camp near the site of the modern Sorrento township. For a variety of reasons, Collins was unhappy about the locality; he considered navigation hazardous, the soil poor and water scanty. Promising land at the head of the bay he was unwilling to develop due to the show of strength by large bands of natives. Accordingly he wrote for advice to Governor King in Sydney and was left free to decide between the River Derwent and the River Tamar (Port Dalrymple) as possible sites for transfer of his command. He was probably swayed in his eventual choice of the River Derwent by its reputation as a safe harbour and the fact that Risdon had already been settled.

On 15th February, 1804, Lieutenant-Governor Collins, with the first detachment from Port Phillip in the *Lady Nelson* and *Ocean*, anchored off the new settlement at Risdon. A quick inspection satisfied Collins that the site was quite unsuitable and he made his own reconnaissance, eventually selecting the area on the western bank known as Sullivan's Cove and ordering that the expedition should be disembarked with all its stores in the vicinity of Hunter's Island. In the same month, Collins reported to King that his two ships were "lying within half a cable-length of the shore in nine fathoms of water"; the Lieutenant Governor had selected gentle slopes for his settlement, located a fine stream running from Mt. Wellington and found near the mouth of the stream depths of water which would accept the draught of any vessel of his day (or of the modern era).

The following table shows the early composition of the settlement at Sullivan's Cove (but excludes details of the Risdon camp):

Number Victualled at Sullivan's Cove, 26th February, 1804

Quality	Men	Women	Children
Military Establishment	26	1	..
Civil Establishment	6	..	..
Settlers	13	5	13
Convicts	178	9	8
Supernumeraries	(a) 3	..	..
TOTAL	226	15	21

(a) Including one aboriginal from Port Jackson.

The strength of the colony was increased to 433 persons in June, 1804 when the *Ocean* returned from Port Phillip where it had taken aboard the balance of the original expedition. From the camp on Sullivan's Cove has sprung the present city and port of Hobart.

David Collins was no amateur in the field of colonisation—he had sailed with Governor Phillip as Judge Advocate in the first fleet in 1788 and had acted as Secretary to the Governor till 1796 when he returned to Britain with excellent recommendations. His memory is honoured in Hobart's Collins St., in the Anglican Cathedral (St. David's) and by the memorial above his grave in St. David's Park.

The Settlement on the Tamar (1804)

While the Lieutenant Governor was still in Port Phillip Bay, wondering where best to settle, he sent his namesake, William Collins, on a voyage of exploration to the Tamar estuary. William Collins followed the river up as far

as the Cataract Gorge and returned to Port Phillip with a good account of the possibilities of the Tamar for settlement; in his absence, however, the Lieutenant Governor had made up his mind and was already preparing for the expedition to the Derwent.

Later Governor King received a despatch from Lord Hobart (Secretary of State for the Colonies) who, by a grotesque error, recommended the establishment of a settlement at Port Dalrymple "upon the southern coast of Van Diemen's Land and near the eastern entrance of Bass' Straits". If Lord Hobart really meant "south", then Collins' move to the Derwent had anticipated his wishes. However, since Collins had, in fact, left Port Phillip, was not it necessary to re-occupy Port Phillip or possibly to watch the Strait from Port Dalrymple? King knew that Hobart's despatch was written in ignorance of Collins' move and accordingly decided to use his own initiative without raising questions of geography with the Secretary for Colonies.

In Hobart's despatch, Lieutenant-Colonel William Paterson (New South Wales Corps) was nominated as Lieutenant Governor of the new colony. Paterson set sail with 57 soldiers and convicts in the *Integrity* and the *Contest*, but after a month of adverse winds both ships were forced back to Port Jackson. A second attempt was made using *Buffalo*, *Lady Nelson*, *Francis* and *Integrity* and increasing the party to 181. This time the Tamar was successfully entered but *H.M.S. Buffalo* went aground and was, with some difficulty, brought to anchor in Outer Cove (George Town) on 4th November, 1804. Lieutenant-Colonel Paterson decided that *Buffalo* must be immediately unloaded and accepted the Outer Cove site as a suitable camp while he undertook a more detailed reconnaissance of the Tamar.

Although he penetrated as far as the present fertile site of Launceston, Paterson made the extraordinary decision to set up his headquarters at the head of West Arm and founded York Town, while still maintaining small establishments at Outer Cove, Low Head and Green Island. In commenting on York Town, one can only imagine that Paterson was guided purely by the strategic necessity of being near the entrance to the Tamar and that he gave little thought to the problem of soil fertility and cultivation.

In March, 1806, Paterson was willing to admit that York Town was a most unsuitable site and he accordingly moved his headquarters to the present site of Launceston. Today York Town and Risdon have one thing in common—the almost complete absence of any indication that settlements had ever existed. The Lieutenant Governor's name is commemorated today in Launceston's Paterson Street and Paterson Barracks.

Paterson, before setting out on this expedition, had been involved in an argument as to his status but Governor King had resolved the matter by dividing Tasmania at the 42° parallel and making Collins and Paterson sovereign in their respective halves, but subordinate to him as Governor. In naming the Tamar and Launceston, Paterson was honouring King who came from Launceston in Cornwall.

THE ABORIGINES

Introduction

Although Tasman visited the island in 1642, it was not until Marion du Fresne landed in 1772 that the first Tasmanian aborigines were seen by Europeans; a century later (1876), Truganini, the last representative of her race, died in Hobart.

Origin

Ethnologists have indulged in frequent speculation on the origin of the Tasmanian aborigines. There is general agreement that they were not of the same race as the Australian aborigines who are held to be of Dravidian stock and related to certain primitive races of the South of India. One immediate difference was found in hair; in the Tasmanians crinkly, and in the Australians straight. The Tasmanians are thought to have been negrito and akin to certain primitive tribes in Malaya, New Guinea, New Caledonia and the New Hebrides; in fact, there is evidence to suggest that small pockets of negrito stock existed on the Australian mainland, in particular on the Atherton Tableland in Queensland.

Two theories exhaust the possible ways in which the aborigines could have reached the island:—(i) by sea; (ii) by land-bridge. The sea theory requires either a raft journey from New Caledonia or possibly an island to island traverse of Bass Strait from the Australian mainland. Those who discard the sea theory point to the very primitive canoes reported by early observers; these were made from bundles of gum tree bark and were propelled by hand or stick without the use of sails—most unseaworthy craft to make open sea voyages. Those who still think the sea theory possible say that the primitive tools of the Tasmanians may have been inadequate for boat construction, using local hardwoods, but good enough for working with possibly softer timbers of their earlier homeland. According to this theory, then, the Tasmanians would have been primitive navigators who had forgotten their art in a new homeland which denied them suitable materials for boat or raft construction.

The second theory, considered by most the more probable, relies on the fact that a drop of 150 feet in sea level would establish a land bridge through the Furneaux Islands to Victoria. It is assumed that this land bridge was in existence before the end of the last Ice Age, some ten thousand years ago, when the sea level was perhaps two hundred feet below what it is today. It is further assumed that the Tasmanians, overwhelmed by hostile Australian tribes, retreated first to Victoria and finally along the land bridge to Tasmania. The ending of the ice-age and the melting of the ice caps gradually led to the formation of Bass Strait and the isolation of the race.

Various attempts have been made to compare the Tasmanian aborigines' stage of development with that of Paleolithic races living in Europe many thousands of years ago but it will be sufficient for this article to describe their way of life before the advent of white settlement. It should be remembered, however, that the observations of the early explorers and settlers were not always reliable and that the race, for all practical purposes, was extinct before anthropologists had evolved a scientific approach to their subject. Pity, contempt or hostility appear to have been the prevailing attitudes of the early settlers, who were in the best position to observe at first hand, but objective scientific curiosity was conspicuously absent.

Numbers

As no real count was made of the aborigines until the last pitiful remnants were shipped off to Flinders Island, any estimate of their numbers when settlement began is purely speculative. Nevertheless there is general agreement that they were not numerous and a figure of as low as two or three thousand is accepted as probable.

Clothing and Shelter

The natives wore no clothes but were observed to occasionally carry a skin slung over the shoulder; they protected themselves against the cold by smearing their bodies with seal fat and charcoal, thus blackening their brown skins. Early observers looked in vain for native villages; since the aborigines were hunters with no agriculture or domesticated animals, their life was nomadic and they did little more than throw up rough bark shelters on temporary camp sites. The natives on the west coast, where the weather was more severe, built the most elaborate structures while those on the east coast sometimes seemed satisfied with a mere windbreak built of bark. Where the hunting and foraging area contained caves, the natives used them as camps.

Fire

There was originally some doubt as to whether the natives possessed any means of making fire. Early observers reported that they carried lighted fire-sticks when on the move and that even canoes making for offshore islands sometimes carried fire aboard. Thus, even if they possessed the ability, they must have experienced considerable difficulty and therefore preferred to keep a fire always alight. After settlement, the natives were known to use the friction fire-stick but a few Australian aborigines had then come to the island and it was just possible that they introduced it. For people with so little protection against the weather, fire was important and the women had the task of carrying it from one camping place to the next. Fire was also used intelligently as an aid to hunting—the scrub was cleared in many parts by deliberately set fires which had the double effect of reducing cover for game and of later attracting kangaroo and wallabies when the burnt patch yielded a good growth of native grasses. Considerable tracts of country, particularly in the north midlands, had been cleared in this way when white settlement began.

Weapons and Tools

Their main hunting weapons were the spear and the waddy; their cultural isolation from the Australian aborigine is suggested by the fact that they did not have shields, spear-throwers or boomerangs (or the dingo as a hunting dog). Spears were usually made from straight Tea-tree saplings about twelve feet long, shaped with a stone scraper and with the point hardened by fire; the waddy was about two feet long and ended in a knobby butt. The natives possessed neither the sling nor the bow but were known to kill small game by throwing stones.

The Neolithic people made stone implements, ground and polished them and fixed them to handles; the Tasmanians did none of these things—hence they are classified, on the basis of their artefacts, as still belonging to the Old Stone Age. Their artefacts were of the simplest kind and, in function, can be thought of as scrapers, knives or axes; their favourite material was hard, smooth rock such as quartz, to which they imparted an edge by chipping small flakes from one side with another stone or bone implement. Extensive collections of these primitive stone tools are on display at Hobart and Launceston Museums.

Food

In the primitive Tasmanian economy, men were the hunters and women the fishers. The main animals hunted were kangaroos and wallabies but very few creatures were spared if the native could get within range; wombats, kangaroo rats, wallaby rats, bandicoots, spiny ant-eaters, platypuses, possums and even Tasmanian devils were all items of diet. The usual method of catering

was to throw the untreated kill in a fire and to remove skin and entrails after cooking. Birds were also hunted, including the emu, now extinct, and the native hen, which cannot fly.

Tasmania is a small island but it has over 900 miles of coastline from which the aborigines were able to gather substantial food supplies, mainly in the form of shell-fish. It is a remarkable fact that they possessed neither hooks nor fish spears and did not build fish traps on tidal rivers; there is even reason to doubt that boned fish were ever eaten, possibly due to some taboo of unknown origin. The most popular forms of shell-fish were oysters, mutton fish (abalone), mussels, scallops, limpets, sea snails, periwinkles, warreners and whelks. In fact, it is true to say that the most lasting evidence of native residence in the island exists in the middens—or great heaps of shells—that the foragers accumulated at their favourite haunts along the shoreline. Crayfish were brought up from among the kelp by the women who swam and dived like fish; to catch seals, the women rubbed themselves with seal fat to disguise the human smell and crept alongside the basking mammals before killing them with their waddies. Along the coasts and in offshore islands were the mutton bird rookeries where the young birds could be taken before they could fly (this item of diet is popular among present-day Tasmanians). Bird's eggs were also taken.

The diet described so far has been exclusively meat or fish; Tasmania is no tropical paradise with fruits and vegetables growing in profusion but the natives were known to obtain some food from the natural flora, including berries, manna (an exudation from a species of gum tree), the native potato, the pounded roots of bracken fern, mushrooms and Black-fellows' Bread (an underground fungus).

Tribal Organisation and Carvings

Little is known of their tribal organisation except that one group resented the incursion of another into its customary hunting ground and would contest its passage with arms. No hereditary chieftains existed and leadership went to the best hunter with the older men deciding the movements of the tribe and seeing to the observance of the tribal laws. At Mersey Bluff near Devonport and at Mt. Cameron West near Marrawah, aboriginal rock carvings have been discovered, the pattern of circles and lines resembling the ochred scars with which the natives adorned their bodies. Nothing is known of the significance of the carvings or of the religious beliefs, if any, of the natives. A slab of the rock carving from Mt. Cameron West has been removed and is on display at the Launceston Museum.

The Passing of the Aborigine

The extinction of the race can be told in a short chronological summary:

- 1803 First settlement at Risdon Cove; skirmish with hunting party in which several natives were killed. Prelude to constant friction between natives and settlers; clash of economic interests—whites killed the natives' game, natives preyed on the settlers' sheep.
- 1828 Governor Arthur declared martial law and sent out army units to try to stop the war between white and black. He wanted the natives captured and put in reservations for their own safety but the plan miscarried and the aborigines were killed in even greater numbers.

- 1830 Governor Arthur organised the farcical Black Line. Soldiers and volunteer settlers formed a chain from St. Patrick's Head to the Western Tiers and advanced to converge on Forestier Peninsula where, according to plan, most of the island's natives should have been driven. When the exhausted force collected on East Bay Neck, a natural trap, its total haul was one man and a boy.
- 1834 George Robinson of Hobart Town finished his mission of persuading the natives to give themselves up and the two hundred survivors were shipped to a reservation on Flinders Island. What hostility had started, peace accelerated since white habits and diseases took a heavy toll.
- 1847 The surviving forty natives were removed to Oyster Cove, on D'Entrecasteaux Channel. The last male, William Lanne, died in 1869 and Truganini, the last female, in 1876.

There remains the problem of whether this encounter of Paleolithic with modern man could have been accomplished without the extinction of a race. It is reasonable to conclude that the early whites in Tasmania were no better or no worse than their contemporaries on the Australian continent; the Australian aborigine survived the catastrophe of European settlement but the saving factor was, in the main, the wider spaces into which he could retreat. Since these early conflicts, a new and enlightened attitude of responsibility towards the indigenous inhabitants has sprung up but, in the case of Tasmania, it came too late.

THE CONVICTS

Introduction

The Imperial Government's motive in establishing settlements in N.S.W. and Van Diemen's Land was not simply to dispose of part of its prison population after the revolt of the American colonies denied it the customary facilities for transportation. The interests of a great sea power dictated the doctrine of acquiring bases in every quarter of the globe, a policy which drew strength from long-standing rivalry with France; among other motives were the possibilities of economic exploitation, including the development of a whale fishery. Irrespective of statesmen's motives, the facts are that Tasmania was a centre for the transportation of convicts for 50 years (1803-1853), that in the period 1848-1853 it was the only such centre within the British Empire, and that the Port Arthur penal settlement continued in operation for 24 years after transportation was halted. It is also true that convict labour and skills made very significant contributions to the early development of the colony, the work of their hands being still visible in buildings and bridges.

In the earliest days, the settlements were little more than convict stations populated by prisoners, guards and officials; because free settlers were so few, food supplies had to be imported and famine was a constant threat. The first influx of free settlers came in 1807 and 1808 from Norfolk Island, the colony there being evacuated by Governor King's order. Land and labour were the most obvious needs of intending settlers; since good land was not then in short supply, free grants were made and the labour problem was met by an assignment system whereby convicts were placed in the care of masters as assigned servants. This system was regarded favourably by both government and settler alike since the one escaped the cost of feeding its charges while the other secured labour for the bare cost of subsistence. Assignment developed as an accepted institution during the term of office of Lieutenant-Governor Collins (1804-1810).

Early Penal Institutions

Although some convicts could be let out as assigned servants and others employed on public works and services and in road gangs, there was still the problem of disciplining and isolating hardened offenders. To this end, a penal settlement was opened at Macquarie Harbour in 1822, the site offering maximum security since escape by land could end only in death by starvation in the dense western rain-forests or trackless ranges; escapes ending in cannibalism were not unknown, one notorious fugitive being re-captured carrying part of a companion. The main task of the convicts was ship-building, the source of timber being Huon pine logs floated down in rafts from the Gordon River. The settlement was the last link in a chain of rejection since some inmates at least must have been triple outcasts, first from Britain, then from N.S.W. and finally from the Derwent or Tamar settlements. Hells Gates, the name given to the narrow sea entrance to Macquarie Harbour, may have been an accurate title in the period 1822-1833 when the penal settlement operated. The closing of the establishment became possible when the Port Arthur settlement was fully organised.

A second penal settlement was made in the east on Maria Island at Darlington and operated in the period 1824-1832; here, the milder climate was associated with milder treatment.

Port Arthur

Port Arthur, possibly Australia's best known penal settlement, commemorates the name of Colonel George Arthur who ruled the colony from 1824 to 1836. The chosen site at the south of two peninsulas (Forestier and Tasman) offered maximum security since the path of escape by land lay first across the narrow isthmus at Eagle Hawk Neck and then across a similar feature at East Bay Neck (Dunalley). Other advantages were the comparatively mild climate, the availability of good timber, coal, and clay for brick making, and the shortness of the sea voyage to Hobart.

Development of this penal settlement began in 1830 and it soon formed a part of Arthur's system of prisoner classification which comprised seven layers. At the fortunate end of the scale were the "ticket of leave" men, i.e. prisoners with unexpired sentences working as free men, subject to certain restrictions. Next came assigned servants who might hope to graduate to "ticket of leave" status as a reward for good conduct. Then came, in descending order, those employed in public works and services, those in the road parties and those in the chain gangs. The remainder were confined in penal settlements, Port Arthur becoming the chief, and the bottom of the scale was reached with those incarcerated in chains. Arthur's system allowed for mobility between these seven strata, movement up or down depending in some measure upon the individual's behaviour.

Apart from the main penitentiary at Port Arthur, there were outstations on Tasman Peninsula, examples being the gaol farm at Safety Cove and the coalmines at Saltwater River. Transportation was a sentence imposed on children as young as ten years of age and, in Port Arthur's early days, the problem of segregation was faced by establishing a special boys' prison at nearby Point Puer.

Across Eaglehawk Neck was tethered a line of dogs and here the main sentry posts were located; evasion of this screen would have been within the power of a good swimmer but the authorities sedulously fostered the myth of shark-infested waters. Even if a fugitive could evade the watch maintained on both peninsular necks, news of the escape rapidly passed to Hobart by sema-

phore signals operated from a chain of hill-top stations. Port Arthur was also the site of the island's first "railway", a wooden line having been constructed north to Taranna to accommodate trucks pushed and hauled by man-power.

On the other hand, convicts at Port Arthur were not men without hope. Statistical returns of Arthur's regime show "the number sent up for good behaviour" annually; expressed as a proportion of the establishment's population, the number "sent up" improved from under 2 per cent in 1830 to 25 per cent in 1836.

Because so much of the Port Arthur establishment remains visible today, there is a tendency to think of it as being the main centre of concentration of the convict population. In actual fact, only a small proportion of the total convict population were inmates in any year prior to the cessation of transportation in 1853. It remained under Imperial control in the new era of self-government, reverting to colonial control in 1871, when the prison population had sunk to 271. It was finally closed down in 1877, the few remaining inmates being transferred to custody in Hobart.

The Probation System

In 1831, land sales had replaced free grants of land; within a short time, the Imperial Government moved to end the supply of labour available to settlers under the assignment system and to substitute the probation system. It is difficult to give any short summary of this system since it was subject to change and experimentation. Originally it was envisaged that the future transportee would move to freedom in three stages:—first serving in a probation gang for a scaled-down term related to his original sentence; next as a passholder of the lower grade able to work for a proportion of current wages; finally as a passholder of the higher grade able to demand full wages, pursue a trade and enjoy freedom of movement. Administratively it was necessary to distinguish between those working out their sentences under the old system and future arrivals who would do the same under the new system.

The new scheme came into operation under Sir John Franklin in 1841. During the governorship of Sir John Eardley-Wilmot (1843-1846), a further elaboration was added, Norfolk Island coming under Tasmanian control. Long-term prisoners, i.e. with sentences of 15 years or more, were transported to Norfolk Island; terms with the probation gangs were shortened to a maximum of two years; three grades of passholder were established and ticket-of-leave status was the final step before full freedom. The next governor, Sir William Denison, resisted an attempt by the Imperial Government to let some prisoners serve out half their sentence in Britain and then be given ticket-of-leave status on arrival in Tasmania. The compromise agreement provided for immediate grant of ticket-of-leave on arrival to the best-conducted transportees, short-sentence men to work as passholders, long-sentence men to be employed on public works and incorrigibles to go to Norfolk Island.

End of Transportation

These experiments with probation systems were carried out in the face of growing hostility from the settlers who were no longer content to live in a penal colony. The end of transportation to N.S.W. had caused the annual intake into Tasmania to rise steeply, the peak being in 1842 with 5,329 convict arrivals; convicts "on strength" in 1847 reached a peak of 30,476 when the total population of the island was only in the vicinity of 70,000. The probation gangs and establishments spread throughout the colony seemed incapable of usefully employing the rapidly increasing convict population and the settlers

feared that continuance of the system would be a perpetual barrier to the granting of effective self-government. The Anti-Transportation League, founded in 1850, was formed to more effectively express the accumulated discontent of a decade; as early as 1845, the "Patriotic Six", members of the appointed Legislative Council, had been widely acclaimed for their resistance to charging the colony heavily for expenses related to the convict system. Their resignation in 1845 and re-instatement in 1847 inevitably aroused heated public discussion and criticism of the Imperial Government's policies. The popular agitation could not be ignored indefinitely and the last convict transports berthed in Tasmania in 1853.

Numbers

(i) The number of convicts transported to Tasmania in the period 1803-1853 can be estimated from records in at least two ways, firstly from disembarkations, and secondly from embarkations taking into account losses on the voyage. The estimates both yield a figure of between 73,000 and 74,000.

(ii) The following table summarises the annual population of convicts "on strength" from 1805 to 1860:

Convicts on Strength in Selected Years (a):- 1805-1860

Year	Convicts on Strength (a)	Year	Convicts on Strength (a)	Year	Convicts on Strength (a)
1805 ..	309	1830 ..	10,195	(b) 1847 ..	30,476
1816 ..	409	1835 ..	16,968	1851 ..	20,069
1820 ..	2,955	1840 ..	17,763	1856 ..	5,421
1825 ..	6,845	1845 ..	29,949	1860 ..	1,271

(a) Convicts in all stages of servitude up to and including ticket-of-leave.

(b) Peak year.

Conclusion

It is fallacious to judge the Imperial Government's transportation policy by today's standards. The years of transportation ran parallel with the industrial revolution in Britain; the reports of United Kingdom factory and mine inspectors and the findings of various Royal Commissions, Boards of Enquiry, etc. officially record the miserable condition of British factory operatives, agricultural labourers, miners and paupers in this period of rapid industrial change. The lives of the convicts transported to Tasmania must be compared with those of their free contemporaries in the British Isles if a true perspective is to be obtained. For all its cruelty and inhumanity, the system of transportation did offer some of its victims opportunities in a new and ultimately more favourable environment.

CHRONOLOGY

Preface

The following chronology was compiled in two sections, the period 1642 to 1929 from a document specially prepared by officers of the State Archives, and the period beginning 1930 from a search of contemporary newspapers by Bureau officers.

In the record of more recent years, it was found impossible to describe purely Tasmanian events in isolation since certain national events necessarily form a part of the history of a State within a Federal system; particularly is this true with regard to some Commonwealth Government decisions, the state of the economy and industrial arbitration. On the other hand, there is the difficulty of deciding which events of a purely local character are sufficiently important to warrant inclusion. Obviously Tasmania's first Parliament in 1856 is an item appearing more worthy of permanent record than Hobart's adoption of parking meters in 1955. This difficulty of selection is partly avoided by giving the record of recent years in considerably more detail but inevitably such a policy results in matters of major and minor importance being mingled without distinction. It follows also that the second part of the chronology is limited largely to what the newspapers of the day considered important and that some events of greater significance may have escaped notice.

To round off the picture of any given year, there is a constant temptation to introduce events of world importance; as far as possible, this has been avoided except where such events had considerable local impact, for example, the sighting of a space satellite overhead, a war involving Australians or even the death of a President. In no way should the record which follows be interpreted as an "official" chronology of the State; in actual fact, the record derives from two levels of subjective evaluation, firstly, the selection of items of importance carried out by contemporary journalists, and secondly, the further selection from this narrowed field of items that appeared important to the compilers of the chronology. Some items have been introduced not because they are important but because they have a strong local flavour, for example, the suspected sighting of a Tasmanian tiger, a disabled yacht in the Sydney-Hobart race or an isolated football victory over a V.F.L. side.

Chronology of Events from First Discovery of Tasmania

- 1642 Abel Janszoon Tasman, commanding *Heemskirk* and *Zeehan*, sighted west coast and named his discovery "Anthony Van Diemenslandt". Landings on Forestier Peninsula and near Blackman Bay on east coast.
- 1772 Landing of a party from Du Fresne's expedition at Marion Bay and affray with aborigines.
- 1773 Tobias Furneaux, in the *Adventure*, became separated from James Cook in *Resolution* and landed party at Adventure Bay.
- 1777 James Cook anchored *Resolution* in Adventure Bay on third expedition.
- 1788 William Bligh anchored *Bounty* in Adventure Bay on first breadfruit expedition.
- 1789 John Henry Cox sailed *Mercury* from Cox's Bight to Maria Island.
- 1792 William Bligh, on second breadfruit voyage, anchored *Providence* in Adventure Bay. Bruny D'Entrecasteaux, commanding *La Recherche* and *L'Esperance*, discovered D'Entrecasteaux Channel and charted south-east coast.
- 1793 D'Entrecasteaux returned for further exploration of south-east coast. John Hayes, commanding *Duke of Clarence* expedition, explored Derwent River.
- 1798 Matthew Flinders and George Bass circumnavigated Tasmania.
- 1802 Nicholas Baudin, commanding *Geographe* and *Naturaliste*, explored south-east coast.
- 1803 John Bowen's party of 49 made first settlement at Risdon Cove.

- 1804 David Collins' settlement party landed at Sullivan's Cove (Hobart). Aborigines killed in an affray at Risdon. Risdon settlement closed down. William Paterson's settlement party landed at Port Dalrymple (Tamar estuary).
- 1805 Collins forced by famine to cut rations by one third.
- 1806 Settlers moved from York Town to Launceston area (Tamar estuary).
- 1807 Thomas Laycock's party crossed island overland from Port Dalrymple to Hobart. First Norfolk Island settlers shipped to Hobart in *Lady Nelson*.
- 1809 Governor William Bligh aboard *Porpoise* anchored in Derwent after N.S.W. mutiny and embarrassed Collins with problem of jurisdiction.
- 1810 Lieutenant-Governor Collins' death. Issue of the newspaper *Derwent Star*.
- 1811 Governor Macquarie's first visit to Tasmania.
- 1812 Lieutenant-Governor Thomas Davey arrived. Northern settlement at Port Dalrymple made subordinate to Hobart. *Indefatigable* brought first shipload of convicts direct from England.
- 1815 Hobart and Port Dalrymple declared free ports for import of goods. Davey proclaimed martial law against bushrangers. James Kelly circumnavigated island in a whaleboat.
- 1816 First issue of *Hobart Town Gazette*.
- 1817 Succession of William Sorell as Lieutenant Governor.
- 1818 Death of Michael Howe, notorious bushranger.
- 1820 Visit by John Thomas Bigge to conduct his enquiry into colonial administration.
- 1821 Second tour by Governor Macquarie.
- 1822 Penal settlement established at Macquarie Harbour.
- 1823 Passage of British Act "for the better administration of justice in N.S.W. and Van Diemen's Land".
- 1824 Inauguration of Supreme Court. Arrival of Lieutenant-Governor Arthur.
- 1825 First Launceston newspaper, the *Tasmanian and Port Dalrymple Advertiser*, established. Tasmania constituted a colony independent of N.S.W. Establishment of appointed Executive and Legislative Councils. Departure of Governor Darling from Tasmania left Arthur with the authority of Governor (but not the title).
- 1826 Van Diemen's Land Co. sent first party. Appointment of Commissioners of Survey and Valuation.
- 1827 Colonial Act passed for the regulation of the colonial press—disallowed. Lieutenant Governor received petition for trial by jury and some representation in Legislative Council.
- 1828 Passage of British Act 9 Geo. IV, cap. 83 which increased membership of Legislative Council. Martial law proclaimed against aborigines.
- 1830 George Augustus Robinson began his mission to conciliate the aborigines. First use of juries in civil cases. Beginning of the "Black Line", the military campaign to round up the aborigines. First volume of *Quintus Servinton*, first novel to be published in Australia. Port Arthur established as penal settlement.
- 1831 Approval of British Government's new land regulations discontinuing free grants of land, and replacing them with land sales.

- 1832 First shipment of aborigines to Straits Islands. Establishment of the Caveat Board to settle land disputes and to confirm titles. Maria Island closed down as a penal settlement.
- 1833 Macquarie Harbour penal settlement closed down.
- 1834 Henty brothers from Launceston became first settlers in Victoria, occupying land in Portland Bay area.
- 1835 John Batman sailed from Launceston to Port Phillip as agent for the Port Phillip Association. Tasmania divided into counties and parishes. End of Lieutenant-Governor Arthur's administration. Opening of Ross Bridge. Population estimated as 40,172 persons.
- 1837 Arrival of Sir John Franklin and assumption of office as Lieutenant Governor.
- 1838 Sessions of Legislative Council opened to the public.
- 1840 Cessation of transportation to N.S.W., and consequent increase in numbers transported to Tasmania. Population estimated as 45,999 persons.
- 1841 Assignment System of convict discipline replaced by the Probation System. Rossbank Observatory for magnetic and meteorological observations established.
- 1842 Tasmania created a separate Anglican diocese. Hobart made a city. Peak year for convict arrivals (5,329).
- 1843 Recall of Sir John Franklin and succession of Sir John Eardley-Wilmot.
- 1844 Transfer of Norfolk Island penal settlement from N.S.W. to Tasmanian control.
- 1845 Resignation of the "Patriotic Six" members of the Legislative Council, opposing the heavy expenditure of colonial revenue for imperial police charges.
- 1846 Recall and death of Wilmot. Foundation of the Launceston Church Grammar and the Hutchins Schools.
- 1847 Succession of Sir William Denison. The Lieutenant Governor re-appointed the "Patriotic Six", dispensing with those who had replaced them as Legislative Councillors.
- 1848 Tasmania now the only place of transportation in the British Empire.
- 1850 Foundation of the Anti-Transportation League. Population estimated as 68,870 persons.
- 1851 British Act "for the better governing of the Australian colonies" reached Tasmania; provided for limited representative government. First elections for 16 non-appointed members of Legislative Council.
- 1852 First payable gold found near Fingal. Elections held for first municipal councils in Hobart and Launceston.
- 1853 Arrival of last convicts to be transported.
- 1854 Bad floods throughout colony. Passage of Bill establishing responsible government.
- 1855 Succession of Sir Henry Fox Young; title now Governor. British Government approved Constitution Bill.
- 1856 Name of Van Diemen's Land changed to Tasmania. Opening of new bi-cameral Parliament with W.T.N. Champ leading first government in the House of Assembly. Reorganisation of Police Department.
- 1858 Council of Education set up. Rural Municipalities Act passed. Telegraph established as link with Victoria.

- 1859 Charles Gould appointed to make geological survey of western Tasmania.
- 1860 Population estimated as 89,821 persons.
- 1861 Succession of Colonel Thomas Gore Browne. Telegraph cable to Victoria failed.
- 1862 Promotion of scheme for a railway between Launceston and Deloraine.
- 1864 Arrival of first successfully transported salmon ova.
- 1868 Visit by Alfred, Duke of Edinburgh. Bill passed making primary education compulsory.
- 1869 Succession of Charles Du Cane. Death of William Lanne, thought to be last male full-blood aborigine. Death of Sir Richard Dry. New cable laid to Victoria.
- 1870 Withdrawal of remaining Imperial troops. Population 100,886 persons (Census).
- 1871 Opening of Launceston-Deloraine railway.
- 1872 Contract concluded for building Main Line Railway.
- 1873 Main Line Railway construction begun. Tin discovered at Mt. Bischoff. Start of economic recovery.
- 1874 Riots in Launceston in protest at rates levied for Launceston-Deloraine railway.
- 1875 Succession of Sir Frederick Weld.
- 1876 Race meetings established at Elwick. Gold nugget worth \$12,200 found at Nine Mile Spring. Death of Truganini, thought to be last female full-blood aborigine. Main Line Railway opened for traffic.
- 1877 Port Arthur closed down as a penal settlement.
- 1878 Increased activity in exploration of West Coast.
- 1879 Settlement of constitutional issue known as the "Hunt Case". Rich lode of tin discovered at Mt. Heemskirk.
- 1880 First telephone in Tasmania with line from Hobart to Mount Nelson Signal Station.
- 1881 Purchase of three diamond drills by government for hire to private prospectors. Succession of Sir George Strahan. Population 117,770 persons (Census).
- 1882 Increased prospecting on West Coast.
- 1883 Discovery of the "Iron Blow" at Mt. Lyell.
- 1885 Russian war scare followed by activity in improvement of defences. Formation of Mt. Lyell Prospecting Association.
- 1886 Abye Douglas, Tasmanian Premier and President of the Federal Council, spoke in favour of Australian republicanism.
- 1887 Succession of Sir Robert Hamilton.
- 1890 Establishment of University of Tasmania.
- 1891 Collapse of Van Diemen's Land Bank; deep economic depression. Population 151,150 persons (Census).
- 1892 Mt. Lyell Mining Co. established.
- 1893 Succession of Viscount Gormanston.
- 1896 Establishment of Tattersalls Lottery by George Adams.
- 1897 Record shade temperature of 105.5° at Hobart on 30th December.

- 1898 Serious bush fires. Polling 4 to 1 by Tasmanians in favour of Federation.
- 1899 Departure from Hobart of *Southern Cross* (Borchgrevink) expedition to Antarctic.
- 1900 Departure of Tasmanian contingents to fight in the Boer War.
- 1901 Proclamation of the Commonwealth read. Polling for first elections to Federal Senate and House of Representatives. Visit of the Duke and Duchess of Cornwall and York. Succession of Sir Arthur Havelock. Population, 171,703 persons (Census).
- 1903 Celebration of 100 years' settlement cancelled because of smallpox epidemic in Launceston. Suffrage extended to women.
- 1904 Succession of Sir Gerald Strickland at reduced salary.
- 1905 Experiments in wireless telegraphy between Tasmania and the continent and between Tasman Island and Hobart.
- 1906 Visit by Ramsay MacDonald (later British Prime Minister).
- 1907 New Public Library opened; built with gift from Andrew Carnegie.
- 1909 Succession of Sir Harry Barron. Potato crop wiped out by Irish blight.
- 1911 Population 188,570 persons (Census).
- 1912 Disastrous fire at North Lyell Mine, Queenstown.
- 1913 Succession of Sir William Ellison-Macartney.
- 1914 First aeroplane flight in Tasmania. Departure of first Tasmanian contingent to fight in Great War. First State Labour government formed under John Earle.
- 1915 Serious bushfires.
- 1917 Establishment of electrolytic zinc works at Risdon, of Hydro-Electric Department, and of Snug carbide works. Succession of Sir Francis Newdegate.
- 1918 End of Great War.
- 1919 First export of frozen meat.
- 1920 Visit by Edward, Prince of Wales. Establishment of Cadbury's chocolate factory at Claremont.
- 1921 Population 212,008 persons (Census).
- 1922 Succession of Sir William Allardyce. Completion of Waddamana power station.
- 1924 Succession of Sir James O'Grady. First superphosphate manufactured by Electrolytic Zinc Co. at Risdon.
- 1925 Discovery of osmiridium fields at Adamsfield.
- 1927 Enquiry into proposed bridge over Derwent. Visit by Duke and Duchess of York.
- 1929 Serious floods throughout island. Establishment of automatic telephone system in Hobart. Beginning of economic depression.
- 1930 Export prices fell to half 1928 level. Australian pound devalued so that £ Sterling equalled £A 1.25 (\$A 2.50).
- 1931 Depression continued—10 per cent cut in Federal basic wage. Initiation of austere Premiers' Plan. Conversion loan to reduce rate on internal Federal debt by 22½ per cent. Census of population deferred due to economic crisis.
- 1933 Census of population—Tasmania, 227,599 persons. Succession of Sir Ernest Clark. Commonwealth Grants Commission appointed to enquire into affairs of claimant States.

- 1934 Labour ministry of A.G. Ogilvie first in many years of continuous Labour governments. Second phase of hydro-electric development commenced at Tarraleah and Butlers Gorge.
- 1936 Tasmania linked with Victoria by submarine telephone cable.
- 1937 Epidemic of poliomyelitis. Economic recovery evidenced by \$0.50 "prosperity" loading added to Commonwealth basic wage.
- 1938 Paper mill using native hardwoods established at Burnie. First turbines began operating at Tarraleah power station.
- 1939 Outbreak of World War II.
- 1940 Tasmanians sailed for Middle East with Australian 6th Division.
- 1941 Newsprint production began at Boyer on the Derwent. Tasmanians sailed for Malaya with Australian 8th Division.
- 1942 Daylight saving introduced as war-time measure. Uniform Federal income tax commenced.
- 1943 The floating-arch Hobart Bridge opened for traffic.
- 1944 Pay-as-you-earn income taxation introduced from 1st July.
- 1945 End of World War II. Succession of Sir Hugh Binney.
- 1946 Cessation of man-power controls. Rejection by Legislative Council of bill to grant Federal Government price control powers for three years. Referendum gave Commonwealth power in regard to social services but refused power over marketing and employment. Crash of DC3 airliner at Seven Mile Beach with 25 deaths.
- 1947 Census of population—Tasmania, 257,078 persons. Federal arbitration decision favouring 40-hour week. Court action to stop bank nationalisation by Federal Government. Demobilisation of forces completed. "Displaced persons" commenced arriving from Europe.
- 1948 40-hour week operative for most workers from 1st January. Tasmanians voted "No" almost 2 to 1 in referendum denying Federal Government power over prices and rents. State price and rent controls introduced. State Premier resigned but soon re-instated in office. Hobart's Ocean Pier gutted by fire. Hydro-electric capacity exceeded one-quarter million horsepower. First woman member of Tasmanian Parliament, Mrs. K. W. McIntyre, M.L.C., died in air crash. Visit of De Valera. Legislative Council's denial of supply forced dissolution of House of Assembly—Cosgrove ministry returned to power. High Court ruled against bank nationalisation. Abolition of toll on Hobart Bridge.
- 1949 Visits by Mr. Anthony Eden, M.P. and Lord Rowallan (Chief Scout). Compulsory X-ray introduced in fight against tuberculosis. Saturday morning closing of banks. Clark Dam at Butlers Gorge completed. Theatre Royal purchased by Government. Repco Bearing Co. officially opened at Launceston. Construction begun on Bell Bay aluminium plant. Legislative Council defeated bill giving Federal Government temporary powers to control petrol distribution within State. Port of Hobart held up by 29-day strike; coal supplies cut off by major strike on N.S.W. coalfields and at Tasmanian mines. Sterling devalued by 30 and one half per cent and Australian pound similarly devalued. Outbreak of poliomyelitis caused cancellation of Hobart Show. Federal Labour government defeated at elections and Liberal government installed.

- 1950** End of Federal petrol rationing. Dissolution of House of Assembly granted by Governor and Cosgrove ministry returned to power. Federal child endowment extended to cover first child. Invasion of South Korea and recruiting of volunteers for Australian contingent. Federal basic wage increase of \$2.00 followed by State Wages Boards. Communist Party Dissolution Bill passed by Federal Parliament. Control of State meat prices abandoned.
- 1951** Serious bushfires in January and February. Succession of Sir Ronald Cross. Electric power rationing introduced due to prolonged drought. Communist Party Dissolution Act declared invalid by High Court. Double dissolution of Federal Parliament. Death of Labour leader, J. B. Chifley. Part of Macquarie Harbour frozen over on 2nd July. Hobart Federal basic wage increased from \$16.50 (February) to \$19.90 (November). First intake of National Service trainees entered Brighton camp. Crash of C47 airfreighter at Cambridge. Statewide snow-falls with Hobart blanketed to sea level on 9th August. Referendum to give Commonwealth powers in regard to communism—"No" vote prevailed although Tasmanians expressed slight preference for "Yes". Announcement of drastic Federal anti-inflation budget—economic effects of record wool prices and the Korean war becoming apparent.
- 1952** Inflation continued—Hobart Federal basic wage rose from \$20.80 (February) to \$23.00 (November). Death of King George VI—reign of Queen Elizabeth II. Balance of payments in jeopardy, Federal import licensing introduced. Single licensing authority established for hotels, clubs, etc. Formal end to occupation of Germany and Japan. First woman elected to Hobart City Council. Two women elected to Legislative Council. Bad floods in Derwent Valley. Artificial lake, King William, filled to capacity. State free hospital scheme ceased on acceptance of Commonwealth insurance scheme. State Racing Commission established. Rejection by Legislative Council of bill to give State aid to private schools. Butlers Gorge power station began operating. French art exhibition worth \$200,000 in ship grounded at Bluestone Bay; ship floated off later without damage to paintings.
- 1953** Inflation continued—Hobart Federal basic wage rose from \$23.20 (February) to \$24.20 (August). In September, Court abandoned system of quarterly adjustment of Federal basic wage. Special Premiers' conference discussed return of income tax powers to States but no action followed. Tungatinah power station began operating. Break-away left wing labour group contested Senate election in Tasmania without success. Premier unveiled tablet to Tasman at Lutjegast in Holland. Armistice in Korea. Announcement of transfer to Victoria by Tattersalls Lottery. Price control of meat re-introduced. Bad storm temporarily closed Hobart Bridge. State Wages Boards decided to follow Federal Court in suspension of quarterly basic wage adjustments. Licence granted to new lottery to operate in place of Tattersalls.
- 1954** Hobart Bridge closed temporarily due to pontoon flooding. Royal visit by Queen in liner *Gothic*. Petrov case began with defection of Russian diplomat. Completion of Trevallyn tunnel for hydro-electric power. Menzies government re-elected. Bad flood in South with much damage in Hobart Rivulet area. Rationing of electric power ended. Tattersalls Lottery began operating from Melbourne premises. Centenary of Hobart newspaper, the *Mercury*, celebrated. Bill to increase House of Assembly to 35 members defeated in Legislative

Council. Hobart City Council decided to install parking meters. Census of population—Tasmania, 308,752 persons. Direct appeal by Professor Orr to Premier for Royal Commission on Tasmanian University. State prices control organisation disbanded. Federal Arbitration Court awarded margins based on two and a half times their 1937 level. Bill passed to resolve deadlocks in House of Assembly. Foundation of Metropolitan Transport Trust.

1955 Nubeena suffered damage from tidal wave. Uranium ore discovered at Mt. Balfour and Royal George. Bell Bay aluminium plant officially opened. Water restrictions in Hobart. Royal Commission on Tasmanian University appointed. Cosgrove ministry returned to power without effective majority. First women (two) elected to House of Assembly. Federal Conference of A.L.P. held in Hobart with 17 "break away" delegates out of 36. Australia's first capital city parking meters installed in Hobart. Trevallyn turbines started operating. Tungatinah scheme officially opened. Strike of 16 days at Rosebery mines. Anti-Communist Labour Party (later the D.L.P.) formed in State. Hadleys Hotel (or \$280,000) offered as prize by Tasmanian Lotteries. Drastic cut in imports enforced under Federal licensing provisions. State visited by Earl of Home (later British Prime Minister). Tasmanian Lotteries announced \$500,000 prize for sweep. Rent control past 31st December refused by Legislative Council. Tasmania's first woman mayor (Launceston). Menzies government re-elected. 300 whales stranded near Dunalley.

1956 DC3 airfreighter crashed into Frederick Henry Bay. State Wages Boards' restoration of "cost-of-living" adjustments effective from 1st February. 22-day dock strike at Tasmanian ports. Mile-long Wayatinah tunnel bored through for hydro-electricity. Professor Orr dismissed by University Council. Tasmanian Lotteries announced \$1,000,000 prize for sweep. Richardson Committee's report basis for increases in salaries of Federal parliamentarians. Passage by Legislative Council of long-service leave bill. Bad floods State-wide in May. Federal Court increased basic wage \$1.00 but did not re-introduce cost-of-living adjustments. State granted \$2.60 increase to own employees. State Wages Boards again suspended cost-of-living adjustments. Deadlocked Premiers' Conference failed to agree on uniform wages policy as counter to inflation. Minister for Housing joined Liberal Party, depriving State Government of its majority. Sir Ronald Cross flew from Colombo and granted dissolution of House of Assembly. Labour returned to power in State. Court action by Professor Orr against University Council. Official opening of E.Z. Co's sulphate of ammonia plant. First Tasmanian woman competed in Olympic Games held in Melbourne. Centenary of self-government celebrated. Lottery prize of \$1,000,000 reduced to \$785,000 due to under-subscription. Trevallyn power scheme officially opened.

1957 Helicopter pilot claimed to see Tasmanian tiger in remote south-west. Extensive bushfires in January. High level bridge design approved for Derwent. Parking meters introduced in Launceston. 88-year-old Mt. Nicholas coal mine closed down in Fingal Valley. Legislative Council rejected bill giving aid to private schools. Serious recession in timber industry. Substantial relaxation of Federal import curbs. First fall for three years in "C" series index (March quarter). Federal court increased basic wage \$1.00. Union levies for political purposes challenged by Hurseys. Professor Orr's appeal to High Court of Australia failed. National service intake lowered and selection

determined, in part, by ballot system. Clarence rate payers voted to replace elected Council with appointed Municipal Commission. Murray Committee on Universities visited State. High Court upheld principle of uniform income tax (challenged by Victoria and N.S.W.). Severe flooding in Hobart. "Comprehensive High School" policy announced. First space satellites—Sputniks I and II—seen over State. Keel laid of *Princess of Tasmania*. Commonwealth announced greater financial aid to Universities, following Murray Report. Centenary of Hobart's incorporation as a city celebrated.

- 1958** Water restrictions in Glenorchy and Launceston. Visit by Mr. Macmillan, British Prime Minister. Hurseys blocked by dockers from working on wharves—court action initiated. Visit by Queen Mother. Water restrictions in Hobart. Federal Ministry accepted second defeat of banking legislation in Senate without calling for double dissolution. Unsuccessful agitation by churches and other bodies for re-opening of Orr case. Federal court increased basic wage by \$0.50. Bad floods in Derwent Valley. Chair of Philosophy boycotted. Police guarded Hurseys working on docks following Court order. In football carnival, Tasmania defeated W.A. and S.A. Establishment of Rivers and Water Supply Commission. Sputnik III photographed above Hobart. Viscount prop-jets introduced on Bass Strait routes. Four mile long Liapootah tunnel bored through for hydro-electricity. Mr. Cosgrove succeeded by Mr. Reece as Premier. Number of Supreme Court judges increased to five. Commercial licence granted to Tasmanian Television Ltd. Completion of Hobart's Olympic Pool. Supreme Court awarded Hurseys substantial damages. Menzies government re-elected. Public Service Tribunal established as industrial authority. *Princess of Tasmania* launched.
- 1959** Fatal shark attack at Safety Cove. Hobart temperature 105° on 20th January. Extensive bushfires. New licensing Act further restricted Sunday drinking. Tourist-class fares introduced on air routes. Official opening Queenstown aerodrome. New system of increased Commonwealth grants for State roads. Richardson Committee recommended increased salaries and pensions for members of Federal Parliament. Administrator's revocation of appointment of Treasurer who had refused to resign from cabinet. Dissolution of House of Assembly. State visited by discoverer's descendant—Herman Abel Tasman. First election to fill 35 seats in House of Assembly; Labour re-elected. Succession of Lord Rowallan. Federal Court awarded \$1.50 increase in basic wage. New Commonwealth system of grants reduced claimant States to two—Tasmania and W.A. High Court verdict in Hursey case upheld right of unions to strike levies for political purposes. *Princess of Tasmania* commenced roll on roll off ferry service Melbourne to Devonport. Heavy snowfalls in late September. One-way street traffic plan introduced in Hobart. Visit by Earl Attlee (ex-Prime Minister of Britain). Brooker Highway open for traffic between Elwick Road and Cleary's Gates. Water restrictions in Glenorchy and Kingborough. Kingborough Council requested own replacement by Municipal Commission. Suspension of National Service training. Federal Court granted 28 per cent increase in margins. Tender accepted for new bridge across Derwent to be finished in three years. Severe hail damage to Huon Valley orchards in December.
- 1960** Sustained heatwave with numerous shark reports in January. Liapootah turbines started operating. Kingborough Council replaced by Municipal Commission. Poatina road gave new access to Great Lake.

Zeehan-Strahan railway closed. Dr. Evatt retired as Federal Labour leader. Federal import controls virtually abolished. Tasmanian Industrial Mission visited U.K. and Europe. First meeting of new body, Inland Fisheries Commission. Hobart water restrictions in March. Drought conditions general in south. TV stations ABT2 and TVT6 started programmes from Mt. Wellington transmitters. Federal court refused basic wage increase. Severe floods in central Hobart and Derwent Valley; flood relief fund opened for victims. In football, Tasmania defeated V.F.L. Macquarie No. 1 wharf officially opened on site of gutted Ocean Pier. Construction started on Tasman Bridge. Tasmanian Military Command Headquarters reduced in status. Committee appointed to report on salaries of State parliamentarians. Construction begun of board mills at Wesley Vale. Tasmanian Lotteries surrendered licence and Tattersalls arranged ticket sales within State through agents. Negotiations begun for sale of Commonwealth interest in Bell Bay aluminium plant. State Parliament ignored committee's report recommending increased members' salaries. Royal Flying Doctor Service commenced in State. Posthumous award of George Cross to Raymond Donoghue. Australian "give way to right" rule introduced. Last Hobart trams ceased running. Inflationary situation developing; drastic Federal counter-measures, e.g. "credit squeeze", car sales tax increased from 30 to 40 per cent. *Bass Trader*, a trailer-container vessel, launched. Hobart Gaol vacated, a new prison being available at Risdon.

1961 High temperatures and widespread bushfires; water restrictions in many areas. Federal sales tax on cars decreased from 40 to 30 per cent. Government initiated plan for bulk water supplies to west bank of Derwent. *Bass Trader* commenced service to Melbourne from northern ports. First manned satellite, Gagarin's, circled earth. Concern at growing unemployment followed by easing of Federal credit restrictions in June. Census of population—Tasmania, 350,340 persons. Carpet factory opened at Devonport. Rosebery-Tullah road officially opened. Federal court increased basic wage \$1.20. *William Holyman*, cargo container vessel, entered Bass Strait trade. Site cleared for pulp processing plant at Geeveston. State visited by Lord Mayor of London. Matriculation college policy announced. Construction started for Hobart-Sydney ferry terminal. Visit by Lord Chief Justice of England. Consumer price index (September quarter, six capitals) showed first drop for four years. Establishment of Metropolitan Water Board. First headmistress of a State secondary school appointed. Tests of Savage River iron ore samples in U.S. furnaces. Legislative Council rejected equal pay legislation. Menzies government returned to power with majority of two seats; a Tasmanian independent won seat in Senate.

1962 "Sputnik" dredges banned from Channel scallop beds. Power boat licensing introduced for south and east coasts. Board of enquiry reported adversely on prospects of thermal power generation in Fingal Valley. Sweeping Federal measures in February to stimulate economy; special grants for State works programmes. Compulsory third party insurance expanded to give passenger cover. Federal Court quoted stability of consumer price index in refusing basic wage increase. Expansion programme begun at Bell Bay aluminium plant. First Professor of Agriculture appointed. Butter oil production commenced at Deloraine. Legislative Council took initiative in increasing salaries of parliamentarians. Official opening of ferro-manganese plant at Bell Bay. Catagunya turbines began producing

electricity. Official opening of TNT9 (northern commercial TV). State Wages Boards granted three weeks' annual leave. Federal Treasurer announced Tasmania to receive employment stimulation grant of \$2,336,000. Governor, as Visitor to University, dismissed petition for review of Professor Orr's dismissal. Roster system introduced for "out of hours" petrol sales. State visit by King Bhumibol and Queen Sirikit of Thailand. Keel laid of *Empress of Australia*. State subsidies announced for municipal fluoridation schemes. Closure of Mt. Lyell Railway, Queenstown to Strahan. Wood pulp production commenced at Geeveston. State branch of Country Party formed. Water pumped direct from Derwent at Bryn Estyn to Berriedale (West Derwent Water Scheme). End of metropolitan water shortages in sight.

- 1963 Electra flew Hobart to Melbourne in 55 minutes. Speed limit in built-up areas increased from 30 to 35 mph. Collapse of negotiations for Britain's entry into Common Market. Private visit by Prince Richard (Gloucester). Visit by Queen to Royal Hobart Regatta. Abolition of State entertainments tax. Succession of Sir Charles Gairdner. Equal Pay Bill referred to select committee by Legislative Council. Official State trade mission left for South East Asia. Official opening of St. Helens aerodrome. Federal court increased margins 10 per cent and granted three weeks annual leave. Decision made to fluoridate Hobart water supply. New consolidated Local Government Act effective from 1st July. National TV (ABNT3) started operating in north. Trans-Derwent ferries ceased operating. July snowfalls blocked Midlands Highway. T.A.A. licensed to operate intra-State air services. Construction begun on alginate plant to process seaweed. Uniform marriage laws operative from 1st September. Tasmanian fishermen began exploitation of Port Phillip Bay scallops. Universities Commission recommended medical school for Tasmanian University. Federal Government re-named new decimal unit the dollar (in lieu of the royal). Federal Government granted \$5,000,000 for road to Gordon River. Federal Government rejected request for aid for thermal power station in Fingal Valley. Hydro-Electric Commission imposed power cuts on industrial consumers due to prolonged drought. Floating bridge in danger from break-away barge in storm. *Seaway Queen*, trailer and container ship, launched. Death of President Kennedy. Piling difficulties slowed construction of the Tasman Bridge. Menzies government returned with substantial majority. Opening of Murchison Highway linking west and north-west coasts. Offer by University Council of \$32,000 to ex-Professor Orr; resignation of Chancellor and some other Council members.

- 1964 *Lolita*, disabled in Sydney-Hobart race, towed to safety by submarine *Trump*. Launching of *Seaway King*, roll on roll off vessel. T.A.A. commenced intra-State air services. Launching of *Empress of Australia*. Tasmanians lost in sinking of destroyer *Voyager*. Disqualification, after swab, of Wangle, Hobart Cup winner. Poatina turbines commenced electricity generation; industrial power cuts ended. High Court rejection of Ansett-A.N.A.'s challenge to grant of intra-State air services to T.A.A. Alginate plant began operations on east coast. Strahan air port completed and first used by Japanese examining Savage River iron ore. Country Party nominated candidates for State election. Russian whaling ships took on fuel at sea in Storm Bay. Labour re-elected at State elections with effective majority. Federal court reduced long service leave qualifying period from 20 to 15 years. *Seaway Queen* began Melbourne-Hobart operations. Federal

court increased basic wage \$2.00, rejecting employers' total wage concept. Mr. Orr announced rejection of University's settlement terms. Shannon power station closed down. Severe flooding in Launceston area. Liberal Party decided to endorse candidates for Legislative Council in certain circumstances. Federal grants to private home purchasers made available. Establishment of State Board of Enquiry to investigate rising prices. B.H.P. granted licence to explore minerals in remote south-west. Federal Budget brought tax increases. Tasman Bridge opened for traffic and Hobart Bridge towed away. *Seaway King* began Sydney-Hobart operations. Forestry works extended in Fingal Valley as counter to coalminers' unemployment. 50 whales stranded on Flinders Island. Increase in State parliamentary salaries determined by Parliamentary Salaries Tribunal, such determination being binding on the Crown. Abolition of "junior minister" status in State Cabinet. State subsidies for electric power in remote localities abolished. H.E.C. "mole" used to widen railway tunnel at Rhyndaston. Hobart's water supply fluoridated. Tasmanian representative carried Australian flag at Tokyo Olympic Games. One-way street scheme introduced in Launceston. Prices Board of Enquiry replaced by Royal Commission after legal challenge. Tasmania re-established as separate Army Command. Glenorchy raised to city status. Federal parliamentarians increased their salaries, pensions and allowances. At Senate election, D.L.P. leader lost Tasmanian seat. Compulsory National Service on selective basis introduced. Recommendations for metropolitan expressways, &c. announced as part of official transportation study. Pickands Mather and Co. International (U.S.A.) and Mitsubishi Shoji Kaisha Ltd. agreed to joint investigation of Savage River iron ore deposits.

- 1965 *Empress of Australia* sailed from Sydney on first voyage to Hobart. Senator Cole's appeal for recount disallowed by Court of Disputed Returns (High Court jurisdiction). System of provisional driving licences introduced. Geeveston wood pulp expansion programme announced. Death of Winston Churchill in London. Australian troops deployed in Borneo. Savage River iron ore sent to U.S.A. for grinding tests. Contract let to raise Great Lake level by new Miena Dam. Tasmanian Churchill Scholarship appeal raised \$232,000. Dental nurse scheme for schools announced. Fokker Friendship crash-landed at Launceston Airport without loss of life—23 persons aboard. Abalone fishing stepped-up. *Slava Sevastopolu*, Russian whaler, refused to buy supplies in Hobart. Visit by Archbishop of Canterbury (Dr. Ramsey). Visit by Duke and Duchess of Gloucester. Ceremonial opening of Tasman Bridge and Poatina power station by Duke of Gloucester (both had been functioning for some time). Discovery of off-shore natural gas near Gippsland coast of Victoria. Battalion of Australian troops sent to South Vietnam. Report by State Royal Commission on prices and restrictive trade practices. Sorell and Midway Point connected to metropolitan water supply. Expansion programme announced for Boyer newsprint mills, capacity to increase by 70,000 tons. D'Entrecasteaux scallop beds closed for 1965 season. Medical examination of first Tasmanians called up under new National Service scheme. Speaker's chair stolen from House of Assembly by students. New Shops Bill extended Saturday morning closing to Hobart's eastern suburbs as from 1966. Full report on Hobart transportation study released. Brickmakers Bay, east of Stanley, decided on as shipping terminal for Savage River iron ore. Very severe drought in most continental States. Commonwealth Conciliation and Arbitration

Commission evolved one and a half per cent formula (total wage to be increased by one and a half per cent and the increment to be called a rise in margin; the basic wage to remain unaltered). Waddamana "A" power station closed down but "B" retained for peak loads. Chief Secretary ordered enquiry into conduct of Weeroona Home for Girls at Latrobe. Supreme Court disallowed Dr. Clemente's appeal against election of Sir Henry Baker to Legislative Council. West Coast viewers received TV from translator stations on Mt. Owen and Mt. Read. Bass Strait oil drilling commenced. Expansion of ferro-manganese plant at George Town announced. 38th Congress of A.N.Z.A.A.S. (scientific body) held in Hobart. Federal budget increased some taxes, including income tax. State budget increased driving licences, land tax, stamp duties and racing taxes. Geeveston wood pulp capacity raised to 48,000 tons with 75,000 tons as target. Announcement of projected plant at Wesley Vale to produce paper on same scale as present plant at Burnie. 93 mph gust set Hobart record in September. Licence given for phosphate search in far North-West. Increase in air fares. Federal Government gave approval for export of Tasmanian iron ore. Report of Municipal Commission recommended reduction of local government authorities from 49 to 20. Savage River iron ore scheme agreed upon by all principals, including Japanese and American interests. Federal Government rejected request for \$792,000 grant for irrigation scheme in Cressy-Longford area. Melbourne and Tasmanian Symphony Orchestras combined to give 100-instrument concert in Hobart. Four Tasmanians received Churchill Scholarships. Three-year expansion programme commenced at Boyer newsprint mills—production to lift from 93,000 tons to 165,000 tons. Expansion programme announced for George Town aluminium plant—annual capacity to be lifted from 54,000 tons to 71,000 tons. Australian woolgrowers voted "No" in referendum on Reserve Price Scheme; Tasmanians voted marginally "Yes".

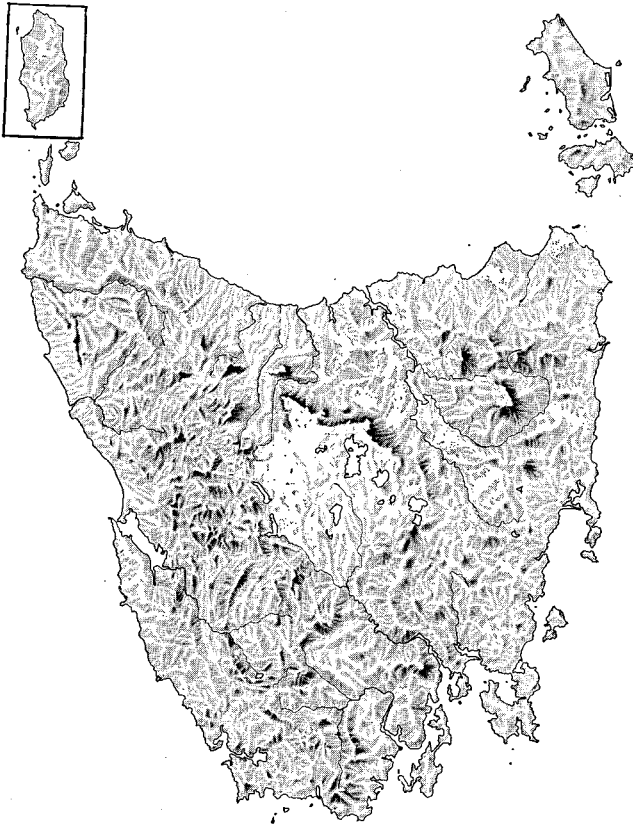
Chapter 2

PHYSICAL ENVIRONMENT

GENERAL DESCRIPTION

Location and Area

The State of Tasmania is a group of islands lying south of the south-east corner of the Australian continent; the major island is called Tasmania and the more important of the lesser islands include King, Flinders and Bruny. The major island, roughly heartshaped with the greatest breadth in the north, extends from $40^{\circ} 38'$ to $43^{\circ} 39'$ South latitude and from $144^{\circ} 36'$ to $148^{\circ} 23'$ East longitude. All the coastline lies in the Southern Ocean except in the north where Bass Strait separates the island from the Australian continent by approximately 150 miles.



Relief Map

The area of the whole State, including the lesser islands, is 26,383 square miles or about 0.9 per cent of the area of the Australian Commonwealth (2,967,909 sq. miles); it is approximately 28 per cent of the size of the United Kingdom.

Australia, extending as it does well north of the Tropic of Capricorn and with much of its area in the zone of the sub-tropical anti-cyclones, is basically a warm, dry continent. By way of contrast, Tasmania is in the temperate zone and practically the whole island is well watered with no marked seasonal concentration; there are no deserts or drought areas as found extensively on the adjacent continent. Because Tasmania is the most southern State of the Commonwealth, there is a tendency to think of it as being close to the Antarctic but its latitude is matched, in the northern hemisphere, by that of Marseilles (France), and Boston (U.S.A.). In addition, the fact that Tasmania is an island shelters it from the extremes of heat and cold experienced in these two centres. The effect of its insular position is illustrated by the variation between summer and winter mean temperatures in coastal towns—this rarely exceeds 15°F. Comparing Hobart (Tasmania) with Melbourne (Victoria), mean maxima are some 6° warmer and mean minima 3° warmer in the Victorian capital although Hobart enjoys slightly more sunlight as it is subject to less fog.

Apart from the Great Dividing Range in the east, Australia is predominantly a land of low plateau and plains with little relief. Again, by way of contrast, Tasmania could legitimately be called the island of mountains, since it has the largest proportion of high country in its total area when compared with the other States. The distinctive feature of the island is not so much the size of the mountains—few exceed 5,000 feet—but rather the frequency with which they occur. The British Admiralty Pilot Book describes Tasmania as “probably the most thoroughly mountainous island on the globe.”

Population Distribution

With a population exceeding 370,000, Tasmania is still thinly populated although its density of 14 persons per square mile is exceeded only by Victoria among the Australian States.

A marked characteristic of the continental States of the Commonwealth is the very high concentration of population in their respective metropolitan areas, Brisbane providing the only example where this concentration falls below 50 per cent of the State's total population. By way of contrast, the Tasmanian population is concentrated in two main areas—(i) Metropolitan Area (Hobart and Suburbs) with about 33 per cent, and (ii) Launceston and Suburbs with about 16 per cent. This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of the north-western towns of Burnie and Devonport which together now contain a further 8 per cent of the State's population. As might be expected with an island, the main centres of population have grown up around ports.

Economic Development

In the nineteenth century, the basic economic activities were farming, mining, forestry and fishing (with whaling of prime importance in the first half of the century). In the twentieth century, evolution of secondary industry was at first inhibited by two major factors—the smallness of the local island market and the relative advantage enjoyed by competitors located closer to the principal markets. There were, however, two geographical features of the island which could be utilised to offset these disadvantages, namely a mountainous

terrain and an assured rainfall. Taken together, these two factors mean cheap electric power (if the necessary investment is made in dams and generating stations), for it has been estimated that Tasmania has at least 50 per cent of the total Australian hydro-electric potential. In the last three decades, the State Hydro-Electric Commission has developed a generating system such that the turbines now in use are rated at over one million horsepower, and work is still proceeding on harnessing fresh sources. Some indication of the tremendous potential still to be tapped is found in the fact that, apart from Lake Margaret, no use has yet been made of the water resources of the West Coast where the island experiences maximum rainfall. The abundance of cheap electric power has led to the establishment of a number of major industrial plants and has transformed the island's economy, which was once heavily dependent on primary industry. Evidence of this change is given by the Census of 30th June, 1961 when 13.1 per cent of the Tasmanian work force was shown as engaged in "Primary Production" but 22.6 per cent in "Manufacturing". Compared purely on the basis of these two percentages, Tasmania is, relatively speaking, a more industrialised State than Queensland or Western Australia.

An island, by definition, can suffer from isolation and there is little doubt that Tasmania has been handicapped by transport difficulties. Two developments are now operating to minimise the effects of isolation—regular and frequent air services and roll-on roll-off ferries. The air service puts a Tasmanian traveller down in Melbourne in just over one hour's flying time from Hobart, while cargoes are air-freighted daily. Roll-on roll-off ferries are playing the part of a bridge and are carrying tourist cars and loaded road freighters across Bass Strait; the main terminal is Melbourne but a similar direct Hobart-Sydney link has now begun operating.

Origin of Population

Apart from natural increase, the main influence in building up the State's population has been migration from the British Isles and, to a lesser extent, from other Australian States. The Commonwealth Government's post-war policy of encouraging settlers from other European countries has had some effect on the composition of the population but, at the Census of 30th June, 1961, 95 per cent of people in the State claimed to have been born in Australia or in the British Isles. The other main countries of birth were Holland, Germany and Poland, in that order.

PHYSIOGRAPHY

Introduction

Tasmania is an island of mountains and is unique among Australian States in being predominantly influenced by polar maritime air masses. From the point of view of settlement and development, these two factors have combined to create assets against which must be weighed certain liabilities. The island, a mere 180 miles from north to south and 190 miles from east to west, concentrates in small compass an amazing variety of mountain, plateau and plain, of river, lake and tarn, of forest, moorland and grassland, of town, farm and uninhabited, even virtually unexplored country. The temperate maritime climate partly explains Tasmania being called the most English of all States but other factors operate to heighten the comparison—the pattern of agricultural settlement with orchards, hedges and hopfields; the Lake country; the early freestone architecture still common in the east; the roads and villages dotted with oaks, elms and poplars. Here, then, is something new for the visitor to see and all the ingredients for a flourishing tourist industry have been amply provided.

Assured rainfall and mountain storages have also given birth to massive development of hydro-electric power and, indirectly, to industry. The growth of forests, too, is promoted by suitable factors of rainfall and temperature, and this forms the basis for industries such as timber-milling and newsprint and other paper production.

The mountainous nature of the island is confirmed by survey which shows six features exceeding 5,000 feet, 28 exceeding 4,000 feet and a further 28 exceeding 3,000 feet. The highest mountain is Mt. Ossa (5,305 feet) some ten miles north-west of Lake St. Clair, and north-west again from this peak lie Mt. Pelion West (5,100 feet), Barn Bluff (5,114 feet) and Cradle Mountain (5,069 feet); the furthest distance, 15 miles, is from Mt. Ossa to Cradle Mountain. In the Ben Lomond area, the principal features are Legge's Tor (5,160 feet) and about six miles south, Stack's Bluff (5,010 feet). Each of these mountainous regions and a number of others have been set aside as National Parks and Ben Lomond is renowned for its winter sport.

Water Resources and Rainfall

Fresh water navigation has played very little part in the island's development, the rivers being too fast-running, too shallow or too short. Of the four major ports, three are located on tidal estuaries—Hobart on the Derwent; Launceston on the Tamar; Devonport on the Mersey (Burnie has built a port on the open sea protected by breakwaters). Rivers, however, are significant in the Tasmanian scene for three reasons: (i) use of headwaters for hydro-electric generation, (ii) domestic and industrial water supply, (iii) irrigation, although there are no major schemes, either private or government, in operation. Hobart, for example, draws much of its water supply direct from the upper Derwent River without use of a dam and the flow is adequate to serve a population at least ten times greater than that at present. The development of hydro-electric power has been based on full utilisation of the sources and tributaries of the Derwent, with a chain of power houses stretching from Poatina on the Great Lake to Meadowbanks only 32 miles from Hobart. At Launceston, too, the waters of the South Esk have been harnessed at Trevallyn. This does not exhaust the possibility of future development since the following river systems are still to be exploited: Mersey-Forth-Wilmot (north-west), Arthur (north-west), Pieman (west), Gordon-Franklin-King (west), Huon (south). Work is now proceeding on developing the Mersey catchment and possibly a Gordon scheme will follow.

As a liability must be entered the fact that large areas of the State cannot be cultivated because there is too much rainfall (in contrast with the mainland of Australia where often the reverse situation applies). Further, the mountainous terrain and accompanying highland climate have restricted farming to relatively small areas of suitable country, mainly river valleys, coastal plains and the lower plateaux. Expressing all figures as fractions of the State's total area, farm statistics for 1963-64 show that while rural holdings occupied 38 per cent, areas under crop amounted only to 1.4 per cent and a further 8.9 per cent was reported under clover and grasses (other than native). The remaining 28 per cent includes "bush runs", uncleared scrub or possibly land unsuitable for any rural purpose at all. A high proportion of the residual 62 per cent of the State's area not included in rural holdings is composed of forests, national parks and lakes.

Population Centres

The distribution of the State's population is largely influenced by factors of terrain and climate. A convenient way to summarise the present pattern of settlement is to imagine three circles of 25 mile radius centred on Hobart

(representing the south-east), Launceston (the north) and Ulverstone (the north-west): (i) with Hobart as centre, 42 per cent of the Tasmanian population is located within the 25 mile circle, (ii) with Launceston as centre, 22 per cent, (iii) with Ulverstone, 16.5 per cent. Since all circles are exclusive of each other, these three defined areas will together contain more than 80 per cent of the State's population and this fact justifies the generalisation that the main settlement is in the south-east, the north and the north-west. Residual population not included in the three defined areas is mainly located in the more distant north-west and more distant north-east, in the midlands between Hobart and Launceston, on King and Flinders Islands and along the east coast. Even a 50-mile circle with Queenstown as centre includes only three per cent of the State's population and here the activity is mining, not farming, since this is predominantly an area of high mountains and heavy rainfall. The south-west is completely uninhabited and very thinly populated is the central plateau where the main activities are summer grazing and hydro-electric power generation.

Physiographic Regions

To explain this particular pattern of settlement, it is necessary to isolate the various physiographic regions of the State as follows:

Central Plateau: The main feature is a relatively undissected, dolerite-capped plateau sloping generally south-eastward from an average level of 3,500 feet in the north to 2,000 feet in the south, and drained almost wholly by the Derwent system (although recent hydro-electric development has involved diversion of some waters to the north at Poatina). The northern and eastern boundary of the Plateau is the Great Western Tiers (paradoxically named since they lie in the central north of the island). This is known as the Lake country of the island and is the chief source of the State's hydro-electric power.

High Dissected Plateau: West of Lake St. Clair, the dolerite caps steeply tilted sediments and the plateau is much dissected; it is formed of a series of peaks and broken ridges. The coastlands in the extreme south of the region are rugged but in the D'Entrecasteaux Channel and Huon River areas, narrow coastal belts have been devoted to specialised agriculture.

Western Ranges: The high dissected plateau is bounded by a mountainous series of ranges running parallel to the west coast and in this region are located the principal mines of the State. The south of the region is completely uninhabited.

Western Coastal Platforms: Throughout almost the entire length of the west coast, an uplifted and much dissected peneplain slopes down westward from about 900 feet to end abruptly in cliffs more than 100 feet high. In the south of this region, superhumid button grass plains predominate, and the area is uninhabited. On the coastal plain south of the Arthur River, however, dairy cattle are wintered on agistment runs while north of the river dairying begins to appear and swamps formed by recent emergence have been cleared for farming.

North-West Plateau: North of the Western Ranges lies a plateau averaging nearly 2,000 feet and important mainly for forestry; the coastlands derive mainly from basalt, giving rise to intensive mixed farming based on dairying, potatoes and crops for canning, such as peas and beans.

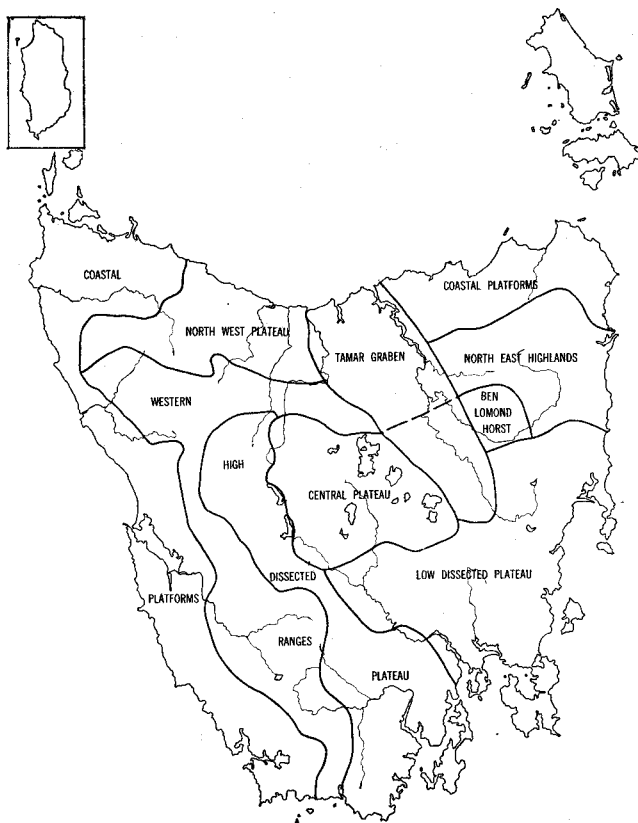
Tamar Graben: This graben (rift valley) is the largest plain and the leading agricultural and pastoral district in the State; it ends in the drowned inlets of the Tamar and Mersey estuaries and Port Sorell in the north.

North-East Coastal Platforms: This region consists of undulating lowland but the soils are acid and the land is used only for grazing.

North-East Highlands and Ben Lomond Horst: This region comprises mostly uplifted remnants of old fold mountains dominated by the 5,000 foot dolerite-capped plateau horst of Ben Lomond, an outlier of the Central Plateau. Here agriculture is largely confined to small basalt-derived basins, and some minerals are worked.

Low Dissected Plateau: In the south-east lies a low dissected dolerite plateau averaging perhaps 1,200 feet and used mainly for grazing. The northern coastlands of this region are narrow and also devoted to sheep but the southern coastland is important for its specialised agriculture. At the extreme south of the region is the drowned estuary of the Derwent, and the Tasman and Forestier Peninsulas.

(The above regions derive from a classification by J. L. Davies, M.A., PH.D., University of Tasmania.)



Physiographic Regions (after J.L.Davies)

DESCRIPTION OF STATISTICAL DIVISIONS

Introduction

Earlier the State of Tasmania was briefly described by analysing its terrain into nine physiographic regions. For statistical purposes, the State is analysed in divisions but these do not necessarily coincide with physiographic regions and have been evolved empirically, mainly on the basis of affinity of type of rural production or identity of economic interest. For obvious reasons of convenience and simplicity, statistical divisions are built from combinations of *whole* municipalities and this fact alone will largely explain the divergence of the statistical divisions from the physiographic regions. Two examples will suffice: (i) Esperance Municipality is included in the Southern Division; only the eastern coastlands of the municipality are settled, the balance lying in the uninhabited south and southwest of the island; thus, due to the relatively large area of Esperance Municipality, the Southern Division not only includes the hop and fruit growing areas of the Derwent, Huon and Channel districts but also Port Davey and Lake Pedder in the remote west; (ii) Deloraine Municipality extends into at least three physiographic regions: the Tamar Graben, the Western Ranges and the Central Plateau. For statistical purposes, it is grouped with other municipalities in the North Western Division.

Statistical Divisions

In subsequent chapters, data for the State will be given in terms of statistical divisions and the following briefly describes each (with population estimates as at 30.6.65):

1. *South Central Division*: The cities of Hobart and Glenorchy, on the west bank of the Derwent Estuary, are separated only by an administrative boundary and together constitute continuous urban development. (Population estimate—91,686.)

“Hobart and Suburbs” is an auxiliary statistical grouping used in some chapters and composed as follows: the South Central Division and the *suburban* portions of the bordering municipalities of Kingborough and Clarence. Both municipalities have large tracts of rural land and are grouped in other statistical divisions. (Population estimate, Hobart and Suburbs, 123,967.)

2. *North Central Division*: The City of Launceston on the Tamar is ringed by four municipalities, which, in addition to suburban elements, have large tracts of rural land; accordingly the City of Launceston is treated as a division in its own right. (Population estimate—37,381.)

“Launceston and Suburbs” is an auxiliary statistical grouping used in some chapters and composed as follows: the North Central Division and the *suburban* portions of the bordering municipalities of Beaconsfield, St. Leonards, Lilydale and Westbury; these municipalities are grouped in other statistical divisions. (Population estimate, Launceston and Suburbs, 59,440.)

3. *North Western Division*: The constituent municipalities are King Island, Circular Head, Wynyard, Burnie, Penguin, Ulverstone, Kentish, Devonport, Latrobe and Deloraine. In general, the division extends north from the Pieman River mouth in the west, then along Bass Strait to the east of Port Sorell. Rainfall in the division is generous—from forty to fifty inches near the shore-line to sixty or seventy inches on the higher country inland. The area is cut into sections by rivers discharging into Bass Strait, the chief being the Mersey, Forth, Leven, Blythe, Cam, Inglis, Black, Duck and Montagu.

It has large tracts of fertile soil which, together with good rainfall and a mild climate, account for relatively dense settlement and an ascendancy in dairying, beef-cattle farming, potato growing and production of crops for canning and quick-freezing (e.g. green peas and french beans). The division is making extensive use of its timber resources, not only for sawmilling but for large undertakings producing fine writing and printing paper, parchment and other special papers, and hardboard.

The two main ports of the division are Burnie and Devonport, the latter being the main terminal for a roll-on roll-off ferry service to Melbourne; urban development has not been confined to these two centres, however, and the coast road along Bass Strait runs through a number of townships serving the rural hinterland.

Until recently, the north-west coast was isolated from the central west coast, the only direct link being the Emu Bay Railway; the new Murchison Highway now connects the two areas and makes the coastal road along Bass Strait part of the "round the State" route. (Population estimate, 82,715.)

4. *North Eastern Division:* The constituent municipalities are Beaconsfield, George Town, Lilydale, Scottsdale, Ringarooma, Portland, Fingal and Flinders. In general, the division extends from east of Port Sorell along Bass Strait, then south along the Tasman Sea as far as the Denison River.

In terms of terrain, the division exhibits wide variety, including as it does the Tamar Estuary, the north-east coastal plains and the north-east highlands. In the Tamar Valley from Trevallyn to the sea, the average rainfall is about 30 inches; elsewhere it varies from 30 inches on the coastal plains to 60 inches on some of the highlands. The rivers in the division, apart from the Tamar and South Esk, are mostly small; the Piper, Brid, Big Forester, Little Forester and Ringarooma flow into Bass Strait while the Mussel Roe, Anson, George and Scamander flow into the Tasman Sea.

Along the Tamar Estuary, the main rural activity is orcharding; elsewhere farming, dairying and grazing play an important role alongside tin and coal-mining, sawmilling, and metallurgical refining.

The main ports for the division are those on the Tamar Estuary, including Launceston, Beauty Point and Bell Bay, the last being the outlet for metallurgical refinery products, including aluminium, from plants at George Town. In considering the estimated population of the division (34,762) it should be taken into account that approximately 25 per cent is located in *suburban* portions of Beaconsfield and Lilydale municipalities adjacent to Launceston.

5. *North Midland Division:* The constituent municipalities are St. Leonards, Evandale, Longford and Westbury. Lying between the Western Tiers and Ben Lomond, the heart of the division contains the largest area of level land in the island and is thought to have its origin in two vast freshwater lakes of an earlier era. The ancient lake-bed soils were easily worked by the early settlers and the area became the island's main centre for cereal crops; cereal crop growing is still practised extensively but the rich grazing potential of the land is also being exploited. Rainfall varies from forty inches in the west to twenty five inches in the south; the chief rivers are the North and South Esk, the Meander and the Macquarie.

In considering the estimated population (26,058), it should be taken into account that nearly 50 per cent is located in *suburban* portions of St. Leonards and Westbury municipalities adjacent to Launceston.

6. *Midland Division*: The constituent municipalities are Bothwell, Hamilton, Campbell Town, Ross and Oatlands. In the west are the Central Plateau and Lake Country, generally at an elevation that allows only limited summer grazing. To the east is a lower dissected plateau where graze more sheep than in any other division. Rainfall varies from 80 inches in the extreme west to almost as low as 20 inches in the east and south. The principal rivers in the sheep belt are the Macquarie, Elizabeth and Clyde; the division also contains the western source and upper waters of the Derwent. (Population estimate, 9,855.)

7. *South Eastern Division*: The constituent municipalities are Glamorgan, Spring Bay, Sorell, Richmond, Clarence, Brighton and Green Ponds. The division includes the east coast from the Denison River south to Forestier Peninsula and the east bank of the Derwent almost to New Norfolk. In the west of the division, rainfall is as light as twenty inches with slightly more in the east. There is good farmland in the area north of the Derwent but, taken as a whole, the division is mainly devoted to grazing.

In considering the estimated population (39,384), it should be taken into account that approximately 66 per cent is located in the *suburban* portion of Clarence Municipality adjacent to Hobart.

8. *Southern Division*: The constituent municipalities are Esperance, Port Cygnet, Huon, Kingborough, New Norfolk, Bruny and Tasman. The division includes the Derwent Valley, the Huon Valley and the D'Entrecasteaux Channel district as well as Bruny Island and Tasman Peninsula; the western half is uninhabited. Rainfall in the west approaches 60 inches or more, in the Huon and Channel districts 35 inches and in the lower Derwent Valley 25 inches or less. The main rural industries are concentrated on hops, orchards and small-fruit while exploitation of timber is important, not only for saw-milling, but also for the mills at Boyer and Geeveston where native hardwoods are converted to paper pulp. The main port used by the division is located at Hobart with Port Huon used seasonally in the export of fruit.

In considering the estimated population (34,354), it should be taken into account that nearly 20 per cent is located in the *suburban* portion of Kingborough adjacent to Hobart.

9. *Western Division*: The constituent municipalities are Waratah, Zeehan, Gormanston, Queenstown and Strahan. The division reaches south from the mouth of the Pieman River to Port Davey and extends east almost to Lake St. Clair. Agriculture plays virtually no part in this area of heavy rainfall and rugged mountains. In a division where rain is measured in feet rather than inches, it is difficult to generalise but 30-year averages for individual stations are as follows:—Gormanston, 120 inches; Lake Margaret, 143 inches; Queenstown, 99 inches; Waratah, 89 inches; Zeehan, 97 inches. Considering the mountainous terrain and abundant rainfall, it is not surprising that the island's largest river, the Gordon, should flow in this division, discharging into Macquarie Harbour; the Pieman River to the north is almost as big. The only port—Strahan on Macquarie Harbour—is approached through a narrow rocky entrance called Hells Gates; strong currents and a sand bar are additional navigational hazards.

Settlement in the division is mainly related to mining since this is the island's richest mineral-bearing tract, the chief minerals being copper, zinc, silver-lead and tin. A large deposit of iron ore has recently been surveyed near

the Savage River, the chief barrier to immediate exploitation being the distance from the possible harbours and the lack of any means of carriage; conveyance by pipeline of treated ore to Brickmakers Bay near Stanley is seen as the solution and construction has started.

Until recently, the west coast was isolated from the north-west coast, the only link being the Emu Bay Railway. The completion of the Murchison Highway now puts the main western towns on a "round the State" route.

The estimated population (9,029) is mainly concentrated in and round Queenstown, the centre of the Mt. Lyell Company's operations.

LOCAL GOVERNMENT AREAS

Area of State

Until recently, the official area of the State of Tasmania was stated to be 26,215 sq. miles (16,778,000 acres), this measurement dating from the previous century; a re-calculation from existing maps in 1907 confirmed that figure. In 1963, a further calculation was carried out using a new series of maps which incorporated fresh survey data and the new official area was announced as 26,383 sq. miles (16,885,000 acres).

The State is composed of 49 local government areas (cities and municipalities) and three of these are either islands or groups of islands.

Details of the "island municipalities" are as follows:

Island Municipalities:—					Area (Sq. Miles)
Bruny	..	..	..	..	139.81
King Island	..	..	..	..	424.40
Flinders	..	..	..	..	768.93
Total					1,333.14
Remaining Municipalities and Cities					25,049.86
Grand Total					26,383.00

While the "island municipalities" include the bulk of the lesser islands forming part of the State, some islands are still included in the area of coastal municipalities, e.g. Maria Island in Spring Bay Municipality. Macquarie Island, site of an Antarctic Research Station and situated in 54° South latitude, is a Tasmanian dependency and included in the Esperance Municipality; the island is 21 miles long with an average width of two miles.

Area of Municipalities and Cities

In the table that follows, the measured area of the State (16,884,971 acres or 26,382.76 sq. miles) has been rounded, in total, to the nearest 1,000 acres and to the nearest sq. mile. The corrections necessary to reconcile to the round-

ed totals have been made by adjusting the area of Esperance, the largest municipality. It should be noted that the area given for any coastal municipality does not necessarily represent the area within its proclaimed boundaries; where such boundaries lie in the sea, these have been disregarded so that the stated area relates to a physical boundary (i.e. the coastline) and not to a legal boundary (which may lie in a seaway or estuary).

Area of Statistical Divisions and Local Government Areas

Local Govt. Area and Statistical Division	Area		Local Govt. Area and Statistical Division	Area	
	Acres	Sq. Miles		Acres	Sq. Miles
Hobart (a)	19,728	30.83	Bothwell	644,463	1,006.97
Glenorchy (a)	29,593	46.24	Campbell Town	354,714	554.24
TOTAL S. CENTRAL DIVISION	49,321	77.07	Hamilton	1,445,459	2,258.53
Launceston (a)	6,974	10.90	Oatlands	380,520	594.56
TOTAL N. CENTRAL DIVISION	6,974	10.90	Ross	306,488	478.89
Burnie	152,647	238.51	TOTAL MID- LAND DIV.	3,131,644	4,893.19
Circular Head	1,215,094	1,898.58	Brighton	108,905	170.16
Deloraine	720,687	1,126.07	Clarence	62,075	96.99
Devonport	28,696	44.84	Glamorgan	379,325	592.70
Kentish	293,436	458.49	Green Ponds	102,827	160.67
King Island	271,615	424.40	Richmond	140,391	219.36
Latrobe	135,608	211.89	Sorell	193,199	301.87
Penguin	106,712	166.74	Spring Bay	277,195	433.12
Ulverstone	126,342	197.41	TOTAL S.E. DIVISION	1,263,917	1,974.87
Wynyard	200,772	313.71	Bruny	89,476	139.81
TOTAL N.W. DIV.	3,251,609	5,080.64	Esperance (b)	1,528,586	2,388.59
Beaconsfield	157,628	246.29	Huon	191,306	298.92
Fingal	674,953	1,054.61	Kingborough	87,682	137.00
Flinders	492,115	768.93	New Norfolk	325,121	508.00
George Town	161,614	252.52	Port Cygnet	59,385	92.79
Lilydale	168,987	264.04	Tasman	118,570	185.27
Portland	390,783	610.60	TOTAL S. DIV.	2,400,126	3,750.38
Ringarooma	403,238	630.06	Gormanston	709,627	1,108.80
Scottsdale	319,143	498.66	Queenstown	34,973	54.65
TOTAL N.E. DIV.	2,768,461	4,325.71	Strahan	922,355	1,441.17
Evandale	244,513	382.05	Waratah	669,373	1,045.90
Longford	246,506	385.17	Zeehan	742,009	1,159.39
St. Leonards	220,202	344.06	TOTAL W. DIV.	3,078,337	4,809.91
Westbury	223,390	349.05	TOTAL TAS- MANIA (c)	16,885,000	26,383.00
TOTAL N. MIDLAND DIVISION	934,611	1,460.33			

(a) Cities.

(b) Measured area is 2,388.42 sq. miles (1,528,557 acres).

(c) Measured area is 26,382.76 sq. miles (16,884,971 acres).

Area of Tasmania and Other Australian States

The following table compares the area and length of coastline of Tasmania with those of other Australian States and Territories:

Australia: Areas and Coastline of States and Territories

State or Territory	Area	Proportion of Total Area	Coastline	Area per Mile of Coastline
	Sq. Miles	Per Cent	Miles	Sq. Miles
Tasmania	26,383	0.89	(a) 900	29
New South Wales ..	309,433	10.43	(b) 700	443
Victoria	87,884	2.96	680	129
Queensland	667,000	22.47	3,000	222
South Australia ..	380,070	12.81	1,540	247
Western Australia ..	975,920	32.88	4,350	224
Northern Territory ..	520,280	17.53	1,040	500
A.C.T.	939	0.03	..	..
Mainland	2,941,526	99.11	11,310	260
Australia	2,967,909	100.00	12,210	243

(a) Excludes coastline of islands totalling at least a further 500 miles.

(b) Includes coastline of Jervis Bay which is part of Australian Capital Territory.

Islands of Bass Strait

There are in Bass Strait numerous islands, the chief being the Furneaux group (Flinders, Cape Barren and Clarke), King Island and the Hogan, Curtis and Kent groups. These all form part of the State since the boundary line between Tasmanian and Victorian sovereignty is defined as 39° 12' South latitude; this parallel lies 5 miles south of Wilsons Promontory, so some Tasmanian territory is located only 8 to 10 miles from the Victorian coast (Rodondo and West Moncoeur islands).

The proclamation of 39° 12' South latitude as the northern boundary of Tasmanian sovereignty dates from 1825 when Van Diemen's Land became a colony distinct from New South Wales. Subsequent State mining legislation has followed the limits of the 1825 proclamation and Tasmania claims mining jurisdiction over Bass Strait as far north as 39° 12' South latitude. Until recently this claim was only of academic interest but now plans are afoot for oil search companies to extend their operations to off-shore drilling in Bass Strait; if a successful strike is made, then Tasmanian sovereignty, the extent of the continental shelf and the limit of international waters could all become matters of dispute. (In July, 1965, natural gas was obtained by off-shore drilling in Victorian waters off the Gippsland coast.)

CLIMATE OF TASMANIA

Introduction

Since the island lies between 40° and 43½° south of the Equator, and no point is more than 70 miles from the sea, the climate is classified as temperate maritime. There is a small daily temperature range approximating 10°F at the coast and double this inland, thus indicating a slight "continental" effect.

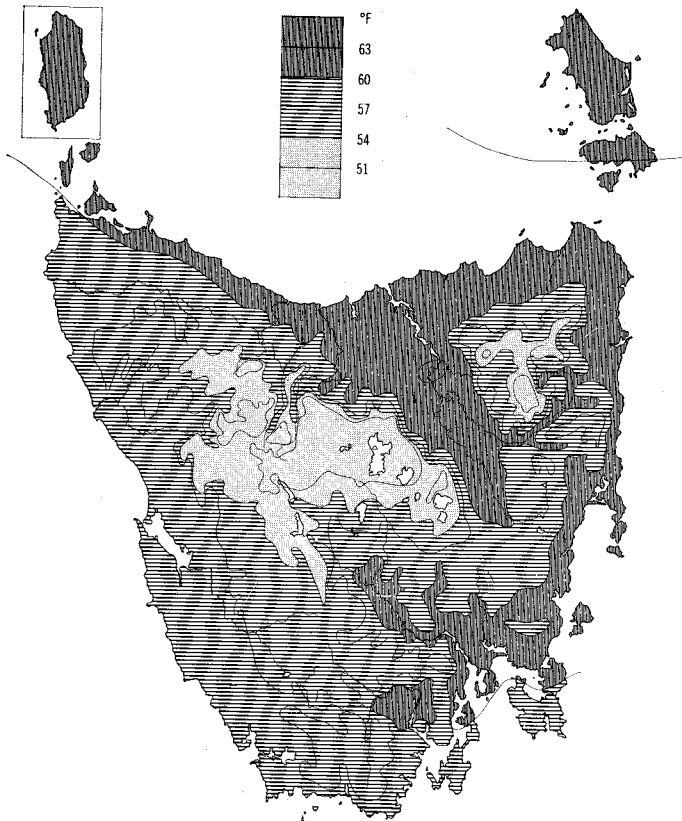
The mountainous topography, especially in the western half, causes an east-west variation which, with the general westerly wind system common to these latitudes, is the predominant feature influencing the climate of the island.

The maximum elevation of the sun is 70° - 73° in midsummer and 23° - 26° in midwinter. The difference between the longest and shortest days is $5\frac{3}{4}$ hours at the northern and $6\frac{1}{2}$ hours at the southern end of the island, while the period of daylight is never less than nine hours. Heat absorption and storage by the sea produce remarkably mild winters and cool summers in coastal areas.

Temperature

Temperatures at sea level are reduced by 5.4°F for each 1,000 feet of altitude, which partly explains the lower temperatures in the west of the State. Increased cloud cover leads to decreased insolation which further decreases temperatures. Thus, at 2,000 feet, temperatures are everywhere too cold to permit growth of agricultural crops in Tasmania.

Frosts are affected to a marked degree by topography. Valleys act as natural channels for the drainage of cold, dense air at night, and frost pockets



Mean Temperature - January

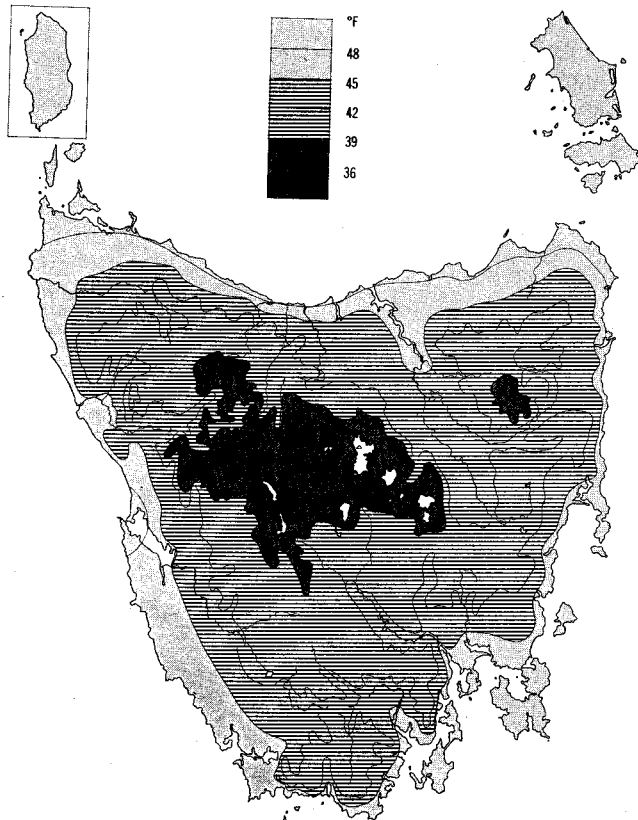
occur on valley floors. Inland centres are only frost-free in summer while the north coast, east and southeast are free after early October. Above 1,000 feet there is no frost-free month.

A further cause of higher mean temperatures in the east is the föhn effect developed. Moist air from the west is cooled as it is forced to ascend over the western and central highlands; moisture is precipitated ("orographic" rain), and the descending air mass is drier and therefore more susceptible to warming. The result is a net warming of the airstream in the eastern lowlands.

In the descriptions of temperature that follow, three averages are used, the basis of all being continuous observation over a 24-hour period yielding two extreme readings; namely a maximum and a minimum. In summarising temperature recordings for a longer period (e.g. a week, a month, &c.), it is usual to employ these averages:

- (i) Mean maxima: the average of the daily maxima for the period;
- (ii) Mean minima: the average of the daily minima for the period;
- (iii) Mean: from formula $\frac{1}{2}$ (maxima + minima) for the period.

To avoid any possible confusion, the following terms have been used, corresponding to the above averages, namely (i) mean maximum temperature, (ii) mean minimum temperature, (iii) mean temperature.



Mean Temperature - July

The recorded extremes of temperature for Hobart are 105°F (on three occasions), and 27.7°F in July, 1895. Such readings are extremely rare, the mean maximum temperature being 69°F in summer and 53°F in winter, and the matching minimum 52°F in summer and 40°F in winter. Thus Hobart can be said to have a cool to mild, even climate, with uncomfortable extremes being the rare exception.

Rainfall

The overall pattern for Tasmania is one of precipitation from a general westerly circulation modified by topography. As the island is located on the northern boundary of the westerly rainfall regime, much of the rain falls in winter, but nevertheless the balance falling outside this period is substantial.

In the dominant west coast mountains, average annual rainfall ranges from 50 to 60 inches on the coast to 146 inches at Lake Margaret; in the north-east, from 30 inches on the coast to 50 inches on the highlands; and the north-west's rainfall ranges from 35 inches near the coast to 70 inches in the higher inland areas.

Extreme three to five-day rainfalls occur in late June on the west coast brought by strong westerlies, but the north coast and the country extending inland to the Western Tiers receive extreme rainfall in mid to late-autumn, when the wind flow is sustained (up to two days) from the north-east.

There is a distinct rainshadow area on the eastern side of the Central Plateau and parts of the Midlands receive 20 inches, and even less in some years. Totals in the east and south-east, and on the Tasman Peninsula, are higher (to 40 inches on the slopes, or even more on rain-attracting peaks), while 70 inches is probable in the uninhabited south. The shadowing effect of mountains reduces amounts in the D'Entrecasteaux area to 30 to 40 inches.

Of note is the sharp gradient in isohyets along the northern and western boundaries of the Central Plateau. This is closely linked with topography.

Rainfall is least reliable in the east, south-east, Midlands and Derwent Valley during late summer and late winter. It is wettest in late autumn and spring. In general, rainfall is least in these parts when the westerlies are strongest (late winter) or relatively absent (summer). The autumn and spring maxima are due to small cyclonic centres of pressure affecting the eastern half of the State.

Effective rainfall, which takes evaporation into account, is that amount required to start germination and maintain plant growth above the wilting point. This obtains from May to October everywhere, but in midsummer there is only one chance in two of effective rainfall being received in the coastal north and lowland areas, and one in three for the drier part of the Derwent Valley and the Midlands.

Floods

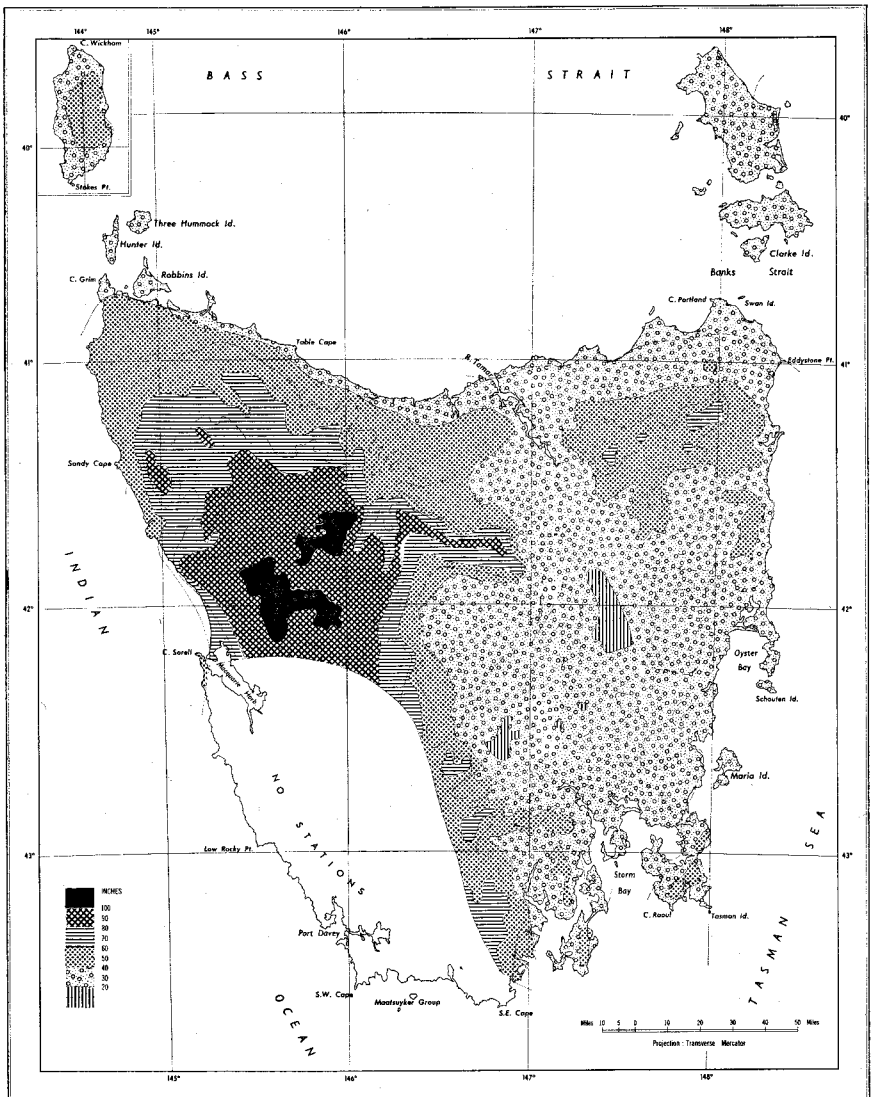
The basin of the South Esk is most likely to be flooded as the catchment area includes most of the north-east highlands, where rainfall exceeds 50 inches. As most of the river flows through flat country, flooding can be widespread.

Flooding of the Derwent can be extensive but is less frequent, while streams in the north-west, because of their smaller catchments, have localised flooding. This also applies to most southern streams, but little is known about flooding in the sparsely populated western mountains.

The most severe floods in the South Esk Basin occurred in April, 1929 and May, 1956, and in the Derwent Valley in April, 1960.

Droughts

These are not so pronounced as in the continental States and are usually confined to a particular region. 1908-1910 was a time of record drought in almost all agricultural areas, resulting in severe crop and stock losses in the east and south-east, and 1914 was even drier. 1945-46 saw severe drought conditions and, in 1951-1954, hydro-electric power had to be rationed; similar measures had to be taken for a short period during 1963-64.



Mean Annual Rainfall

Winds

Tasmania is influenced by windflow veering from north-west to south-west in all seasons of the year, with greatest strength during late winter. The wind circulation in the westerly belt is not regular, and marked variations are imposed on the average seasonal changes.

The first variation in speed is approximately weekly and is connected with the eastward passage of cells of high and low pressure. This cycle disappears when the mean speed of the westerlies decreases, a phenomenon following a broader cycle of several weeks. When the westerlies are weakest, prevailing winds are from the north-east to south-east.

Windspeeds do not become as high as in tropical storms, but gusts to 90 mph occur with the passage of cold fronts or with the formation of small, intense storms. The highest average windspeeds are associated with extensive deep depressions over ocean areas south of Tasmania.

Snow and Hail

(a) *Snow*: Extensive snow to low levels (below 500 feet) occurs with outbreaks of air from Antarctica less than once every two years. It is common on all highlands during July and August. There is no permanent snowline, although patches of snow can remain on the highest peaks of the Central Plateau until December.

(b) *Hail*: This is possible in any month, but is most likely in spring, causing damage to fruit crops, especially in the Huon Valley and Tasman Peninsula. Hail storms occur about four times per year in Hobart, and occasionally in the north and north-west.

Thunderstorms

These are most common in the north and north-west, and are associated with the lifting of warm, moist air by a cold front. Heating of low-level air during summer also produces storms. Thunderstorms are rare during winter, occurring mainly between December and February.

Humidity

Due to its maritime location, the average 9 a.m. relative humidity at all stations is greater than 50 per cent for all months of the year. In fog, the relative humidity is close to 100 per cent. This condition occurs mainly during winter. In summer, periods of high humidity in combination with high temperatures are rare.

Evaporation

Tasmania's climate precludes extremes of evaporation, and no station exceeds six inches as its highest monthly average (this obtains in the lowlands in January, when the highlands have less than four inches). In July, only a small section of the east coast has evaporation of over one inch.

Over the whole year, most agricultural areas have an average evaporation between 25 inches and 30 inches, which is in many places less than the average rainfall. This has had a podsolization effect on many soils, with consequent reduction of fertility in some areas.

The Climate of Hobart

Since 1882, the Weather Bureau has been situated near Anglesea Barracks. (New premises at Ellerslie Road were occupied in 1966.)

Temperature: Mean maximum temperature exceeds 70°F in January and February, and is lower than 60°F from May to September. There are only two or three days with maxima greater than 90°F yearly, and no two successive days have exceeded 100°F.

Mean minimum temperatures exceed 40°F in all months and readings lower than 30°F are rare on any day.

Frost: The average annual frequency of days of frost is 31, mostly between June and August. None has been recorded in January. Cold air drainage is found in the hilly suburbs, and frosts are common on the valley floors.

Rainfall: Mount Wellington induces a strong relief variation in rainfall. At the pinnacle, annual rainfall is 65 inches, and the Springs and Ferntree have 55 inches and 53 inches respectively. The Hobart Weather Bureau receives 25 inches, but some eastern shore suburbs have only 22 inches.

Monthly totals are fairly evenly distributed but with small peaks in April, October and December. The probability of rain on any day is highest during the afternoon in the spring months.

The wettest 12 months on record yielded 43.4 inches to December, 1916, and the driest, 13.0 inches to November, 1943.

Relative Humidity: Highest humidity is at the time of lowest temperature, in the early mornings during winter. As temperatures rise to 3 p.m., humidity decreases by 15-20 per cent. The seasonal variation is not great, although the average humidity during the winter months is 70 to 75 per cent and during the summer months 58 per cent. Periods of high humidity combined with high temperatures are rare.

Fogs occur about eight times per year, but are usually confined to low areas flanking the Derwent during the cooler months. In fact, Hobart experiences more hours of sunshine than Melbourne due to its relative freedom from fog.

Sunshine and Cloud: No marked seasonal variation of cloud amount occurs, but a strong dependence on time of day is evident. The average coverage is five-eighths to six-eighths. During April to September, cloud cover is greater in the afternoon, and from October to March in the morning.

A clear-cut seasonal variation in monthly average hours of sunshine also occurs, with amounts varying from 229 hours in January to 110 hours in June.

Wind: The main wind direction is west to north-west, induced by the shape of the Derwent Valley; the other is the south-east sea breeze experienced during the summer months.

Strong winds are comparatively frequent from passing storms, especially during winter and spring. The strongest gust recorded was 93 mph, in September, 1965. Strong winds from the south-east may also occur during storms.

Thunderstorms: These occur five or six times per year mainly between December and February.

Snow and Hail: Snow below 1,000 feet occurs less than once per year, but falls lying at sea level have been recorded, the latest being August, 1951. Snow is likely on Mt. Wellington during any winter month, but rarely between October and March. The two television transmitters located on the pinnacle (4,166 feet) are equipped to withstand breaks in road communication caused by snow.

Hailstorms occur four times per year, on average, mainly between September and November.

The Climate of Launceston

Launceston is located on the Tamar Estuary at the confluence of the North Esk and South Esk Rivers. Being 40 miles from the coast, Launceston exhibits a continental effect in its climate, i.e. more extreme seasonal and diurnal variations in temperature, and lower total rainfall than at the coast. Weather observations have been taken from the Pumping Station in Forster Street since 1889.

Temperature: The average maximum temperature exceeds 70°F from December to March, and only during June and July does it fall below 55°F. In January and February the average maximum exceeds 75°F.

The average minimum temperature is 50°-52°F during the summer months, below 45°F from May to October, and below 40°F during the winter months. Temperatures lower than 32°F are common during winter, the lowest recorded being 21°F.

Frost: Up to 50 days of frost can be expected in any year and these are most likely from May to August. Ten consecutive days of frost have been recorded and there have been light frosts during summer.

Rainfall: Monthly totals show a strong seasonal variation with July (3.4 inches) having double that of January, the annual total being 29 inches.

Rainfall is least reliable during summer, and is most likely to be less than one inch in February. Heavy rain is mainly confined to the colder half of the year, the wettest recorded month being August, 1936, with 10.01 inches.

In 1916 and 1946, annual falls of over 40 inches were recorded, and in 1908, 1914 and 1919 less than 20 inches. Highest intensity of rainfall occurs during thunderstorms.

Relative Humidity: Seasonal and diurnal variations are similar to those for Hobart, but the daily readings are five per cent to 10 per cent higher.

Occasions of high humidity, associated with moist north-easterly air-streams, are frequent at Launceston, and fogs may occur 30 or more times annually, mostly between May and August.

Sunshine and Cloud: Only a small seasonal variation in cloud amount occurs, and average coverage varies from six-eighths to seven-eighths in winter to five-eighths to six-eighths in summer. There is a tendency for slightly reduced cloud cover during the afternoons, especially in winter.

The monthly average number of hours of sunshine varies from 300 in January to 120 in June, and there is no interruption to the strong seasonal variation.

Wind: A marked effect on Launceston's wind regime is induced by the Tamar Valley. It is orientated northwest-southeast, and most winds conform to these directions. Speeds are roughly similar to those at Hobart, but an increase of 10 to 15 mph in the north-westerly wind occurs on summer afternoons, due to the sea breeze effect.

Strong winds are most common during the colder half of the year, but can occur at any time in association with thunderstorms.

Snow: Settling of snow does not occur in the city area, but falls on the foothills are not uncommon.

General Summary

Perhaps the most striking feature of the Tasmanian climate is the strong variation from west to east, induced by massive distortions in the physiographic scene. Aspect, altitude and slope determine effectiveness of insolation, frequency of frosts and exposure to winds, which, in turn, affect local temperatures and rainfall. These are closely related to changes in vegetative types and in all land use patterns with the exception of mining.

Mean Monthly Temperatures and Rainfall at Selected Stations

The tables that follow give temperature and rainfall data on a monthly basis for six selected stations—Hobart, Burnie and Swansea, all situated on the coast, Oatlands and Launceston, situated inland, and Zeehan, situated in the west.

Mean Monthly Temperatures (Degrees Fahrenheit) and Rainfall (Inches) at Selected Stations

(For definition of mean temperature, see earlier section under "Temperature")

Hobart (Altitude 177 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1962	1963	1964	Av. (a)	1962	1963	1964	Av. (a)
January	62.5	63.9	60.7	61.7	1.36	0.88	0.50	1.67
February	62.5	59.9	58.7	61.3	0.54	1.04	6.72	1.85
March	61.4	59.1	57.5	59.1	1.39	1.13	2.15	2.03
April	55.5	54.5	56.0	54.7	1.65	0.40	1.12	2.46
May	50.4	47.1	51.1	51.1	2.59	1.29	1.94	2.02
June	51.0	45.5	47.1	47.1	2.43	1.11	2.24	2.58
July	47.4	45.6	45.3	46.4	2.29	3.66	2.46	1.85
August	46.5	46.6	48.5	47.9	3.71	1.47	1.94	2.10
September	49.5	50.9	52.1	51.1	3.84	1.62	2.19	2.10
October	51.0	58.3	53.9	53.6	2.95	1.16	1.21	2.82
November	56.7	56.5	56.2	56.6	0.91	1.24	1.83	2.27
December	60.1	60.6	56.1	59.5	1.73	0.51	3.76	2.53
Year	54.5	54.0	53.6	54.2	25.39	15.51	28.06	26.28

(a) Averages are based on the 30 year period 1931-1960.

Launceston (Altitude 266 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1962	1963	1964	Av. (a)	1962	1963	1964	Av. (a)
January	65.3	64.7	62.2	63.5	1.66	2.56	0.46	1.63
February	62.8	62.1	62.2	63.4	1.20	1.32	5.88	1.95
March	62.7	61.4	58.1	61.0	0.99	1.52	2.91	1.59
April	57.0	53.5	57.2	55.2	1.25	0.15	1.05	2.45
May	50.1	48.1	50.3	50.8	3.34	1.05	2.39	2.86
June	49.7	44.5	46.0	46.3	4.49	0.95	4.93	2.78
July	46.8	45.2	43.0	45.3	1.78	3.68	3.18	3.39
August	46.5	46.2	47.8	47.4	3.30	3.38	2.60	3.14
September	49.5	50.6	50.7	50.7	1.36	4.30	3.50	2.54
October	51.3	57.7	53.3	54.5	4.25	2.47	2.12	2.67
November	57.1	58.6	56.7	58.3	1.40	1.34	1.46	2.19
December	62.8	63.4	56.9	61.7	0.87	1.13	1.66	1.96
Year	55.1	54.7	53.7	54.9	25.89	23.85	32.14	29.15

Zeehan (Altitude 579 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1962	1963	1964	Av. (a)	1962	1963	1964	Av. (b)
January	59.1	60.8	52.9	57.6	2.43	2.08	9.18	5.20
February	57.1	57.4	53.8	57.8	6.68	3.98	8.48	4.95
March	57.2	55.3	53.5	56.2	9.47	4.97	6.13	6.00
April	52.5	50.7	53.9	51.9	4.05	2.00	4.55	8.42
May	49.8	45.3	47.5	48.9	9.43	3.07	12.16	9.74
June	48.9	44.3	45.5	45.2	21.78	4.18	8.04	9.93
July	46.0	42.9	44.2	44.6	10.03	9.50	16.05	10.57
August	45.1	45.1	45.9	45.7	11.16	11.58	20.48	11.04
September	48.8	46.7	48.5	48.2	9.53	3.94	11.20	8.67
October	49.5	53.4	49.3	50.4	8.30	3.94	7.17	8.73
November	54.6	50.3	51.7	53.0	7.40	7.95	5.60	7.29
December	57.3	53.1	52.6	56.2	2.53	4.01	11.42	6.22
Year	52.2	50.4	49.9	51.3	102.79	61.20	120.46	96.76

Oatlands (Altitude 1,418 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1962	1963	1964	Av. (a)	1962	1963	1964	Av. (a)
January	61.5	60.1	57.7	58.2	0.94	1.69	0.43	1.37
February	59.7	55.6	54.8	58.2	1.19	0.82	6.08	1.86
March	58.1	57.7	52.5	55.5	1.20	1.23	1.37	1.55
April	51.1	51.3	51.6	49.9	1.82	0.49	1.23	2.25
May	46.0	43.1	46.8	46.0	2.76	1.38	1.19	1.96
June	46.3	41.0	42.6	42.4	1.99	0.83	3.40	1.99
July	43.3	40.9	40.8	42.0	2.50	2.07	2.21	1.73
August	41.9	44.3	44.5	41.5	3.06	1.52	1.51	1.86
September	45.3	46.8	46.6	46.2	1.59	1.84	2.03	1.58
October	46.7	53.7	49.2	49.0	2.89	1.25	1.58	2.42
November	52.3	52.6	51.9	52.7	0.81	1.37	1.16	2.18
December	57.2	57.3	51.5	56.0	0.69	0.57	3.22	2.51
Year	50.8	50.4	49.2	49.8	21.44	15.06	25.41	23.26

(a) Averages are based on the 30 year period 1931-60.

(b) Average is based on 29 year period.

Burnie (Altitude 24 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1962	1963	1964	Av. (a)	1962	1963	1964	Av. (a)
January	(b)	62.1	59.2	60.4	(b)	2.81	1.04	1.57
February	62.1	60.3	60.7	60.9	2.28	1.41	5.59	2.00
March	61.9	59.6	57.5	59.2	3.71	2.05	3.46	2.17
April	55.3	55.0	57.7	55.2	0.46	0.24	2.65	3.15
May	52.8	51.1	51.7	51.9	4.54	0.71	4.40	3.75
June	50.7	49.1	48.4	49.4	5.99	2.33	6.93	4.55
July	49.7	47.9	47.0	47.9	2.33	11.57	7.12	5.14
August	48.5	48.8	48.8	48.3	4.67	5.45	4.52	4.64
September	50.1	50.7	49.9	49.8	2.30	5.69	6.62	3.26
October	51.3	55.8	52.1	52.5	4.09	2.67	3.06	3.71
November	55.7	55.7	55.6	55.1	3.29	1.72	2.26	2.91
December	(b)	59.7	54.3	58.1	0.45	2.05	1.72	2.44
Year	(b)	54.6	53.6	54.1	(b)	38.70	49.37	39.29

(a) Averages are based on the 30 year period 1931-1960.

(b) No record.

Swansea (Altitude 25 feet)

Month	Mean Temperature (°F)				Rainfall (Inches)			
	1962	1963	1964	Av. (a)	1962	1963	1964	Av. (a)
January	61.7	63.7	60.4	61.5	2.98	2.37	0.41	1.65
February	62.2	60.9	58.1	61.8	0.81	1.88	7.33	2.15
March	62.3	58.6	55.5	59.7	0.67	1.20	2.04	2.25
April	55.9	54.3	54.8	55.3	1.06	0.12	1.68	2.28
May	50.5	47.8	49.6	51.5	1.66	2.39	0.97	2.06
June	51.5	46.3	48.2	47.9	0.82	0.65	2.71	2.36
July	48.3	47.0	46.2	46.9	3.53	3.30	1.00	1.71
August	47.5	45.8	49.2	48.3	3.20	0.96	1.05	1.70
September	50.4	50.5	51.4	50.7	0.95	1.10	1.33	1.64
October	51.7	55.4	51.5	53.6	2.08	2.18	2.23	2.33
November	54.7	55.3	53.4	56.7	0.92	1.71	1.09	2.20
December	56.9	59.5	55.6	59.3	1.00	1.10	4.11	2.58
Year	54.5	53.8	52.8	54.4	19.68	18.96	25.95	24.91

(a) Averages are based on the 30 year period 1931-1960.

It is realised that mean temperatures alone can give a misleading picture. The following table shows the mean maximum and mean minimum temperatures for four months in 1964, and indicates the actual departure from the normal, in Hobart, Launceston, Zeehan, Devonport, Oatlands and St. Helens. (Devonport is located on the north-west coast, St. Helens on the east coast.)

Temperatures (a) from Selected Stations, 1964

Station	Maximum Temperatures		Minimum Temperatures		Mean Temperatures	
	Mean for Month (b)	Departure from Normal	Mean for Month (c)	Departure from Normal	Mean for Month	Departure from Normal

JANUARY

Hobart	69.5	-1.0	51.5	-1.3	60.5	-1.1
Launceston ..	73.8	-1.7	50.6	-0.9	62.2	-1.3
Zeehan	58.9	-8.3	46.9	-1.0	52.9	-4.7
Devonport ..	68.0	-2.3	51.0	-0.5	59.5	-1.4
Oatlands	68.3	-1.6	47.0	+0.5	57.7	-0.5
St. Helens ..	73.5	-1.4	50.2	-1.3	61.9	-1.3

APRIL

Hobart	62.0	0.0	50.0	+2.6	56.0	+1.3
Launceston ..	66.4	+1.2	48.0	+2.9	57.2	+2.1
Zeehan	60.8	+1.2	47.0	+2.8	53.9	+2.0
Devonport ..	62.6	-0.9	48.5	+1.4	55.5	+0.2
Oatlands	58.9	0.0	44.3	+3.4	51.6	+1.7
St. Helens ..	64.5	+0.2	48.8	+3.4	56.6	+1.7

JULY

Hobart	51.2	-1.5	39.4	-0.7	45.3	-1.1
Launceston ..	51.9	-1.7	34.1	-2.9	43.0	-2.3
Zeehan	49.3	-1.8	39.2	+1.2	44.2	-0.4
Devonport ..	53.0	-1.1	39.6	+1.0	46.3	-0.1
Oatlands	47.0	-1.5	34.7	+0.3	40.8	-0.7
St. Helens ..	55.1	-0.4	36.3	-0.8	45.7	-0.6

OCTOBER

Hobart	61.2	-0.4	46.6	+1.0	53.9	+0.3
Launceston ..	62.6	-2.0	43.9	-0.4	53.3	-1.2
Zeehan	57.9	-0.4	40.8	-1.7	49.3	-1.1
Devonport ..	59.1	-1.2	44.8	+0.6	51.9	-0.4
Oatlands	57.6	-0.7	40.8	+1.2	49.2	+0.2
St. Helens ..	62.2	-0.7	44.5	+0.7	53.3	0.0

(a) Temperatures in degrees Fahrenheit.

(b) Average of maximum daily temperatures for month.

(c) Average of minimum daily temperatures for month.

Meteorologically, Tasmania is divided into nine districts, with fairly well defined land use patterns appropriate to each. The following table shows rainfall totals for the past 10 years, and 30 year averages, for each of these districts.

Rainfall of Tasmania in Districts (inches)

Period	Agriculture, Dairying and Mixed Farming		Grazing (Mainly Sheep)		Fruit Growing, Grazing, Forestry		Dairy Farming	Mining	Grazing
	Northern	King Island	Central Plateau	Midlands	Derwent Valley	South East	East Coast	West Coast	Flinders Island
1955 ..	52.85	41.83	49.59	23.37	26.00	28.03	33.44	96.84	31.88
1956 ..	56.42	49.07	64.92	32.01	36.35	41.91	51.47	111.77	40.32
1957 ..	33.67	37.94	40.49	20.81	24.87	30.60	26.89	96.08	18.14
1958 ..	43.28	40.55	55.66	27.32	41.18	42.30	37.88	108.31	33.97
1959 ..	29.51	27.53	38.27	17.46	20.69	22.85	30.41	80.51	26.29
1960 ..	41.50	46.37	55.15	26.00	27.55	32.05	37.90	91.79	30.23
1961 ..	29.91	34.55	33.83	15.38	18.61	21.67	28.17	76.69	30.46
1962 ..	37.60	35.48	47.17	20.07	29.93	30.12	29.96	105.99	37.07
1963 ..	33.65	30.79	30.74	14.94	17.94	19.69	24.40	73.26	26.99
1964 ..	50.44	43.49	57.47	26.56	30.98	32.05	36.65	115.97	37.45
District Average (a)	38.80	36.96	50.63	22.64	27.94	29.24	32.91	97.92	29.95

(a) Annual averages based on period 1931-1960.

(The Section on Climate was written from data made available by the Bureau of Meteorology.)

GEOLOGY OF TASMANIA

Time Scale

In the section that follows, the geology of Tasmania is described with frequent reference to geological periods; accordingly a time scale is shown to define the succession of these periods:

Time Scale of Geological Periods and Eras (a)

Time in Millions of Years		Period	Era
Range	Deviation Possible		
0- 1	Quaternary ^(b)	Cainozoic
1- 11 .. ..	..	Pliocene
11- 25 .. ..	..	Miocene
25- 40 .. ..	..	Oligocene
40- 60 .. ..	..	Eocene
60- 70 .. ..	..	Paleocene
70-135	± 5	Cretaceous	Mesozoic
135-180	± 5	Jurassic	
180-225	± 5	Triassic	
225-270	± 5	Permian	Palaeozoic
270-350	± 10	Carboniferous	
350-400	± 10	Devonian	
400-440	± 10	Silurian	
440-500	± 15	Ordovician	
500-600	± 20	Cambrian	
Pre 600	Pre Cambrian	..

(a) Source: Principles of Physical Geology, Arthur Holmes, 1965.

(b) *Holocene*, from now back to approximately 11,000 years ago; *Pleistocene* from 11,000 years to one million years ago.

(c) *Tertiary* period, from *Paleocene* to *Pliocene* inclusive.

The following account commences with rocks and formations of Precambrian origin and finishes in our own period, i.e. *Holocene*:

Precambrian System

The oldest rocks occur mainly in the western half of the State and occupy approximately one fifth the area of the island. They are of the Precambrian era and are divided into two groups. One division consists of those rocks which have been penetratingly deformed. Such deformation has been accompanied by a regional metamorphism converting the pre-existing rock-types to horizons of deformed conglomerate, quartzite, schistose quartzite and phyllite inter-layered with mica, garnet, and albite schist with amphibolite. The other division, which at localities where both are adjacent is the upper and probably the younger, consists predominantly of comparatively unmetamorphosed sequences of interbedded quartz-rich sandstone, siltstone and mudstone. In the unmetamorphosed Precambrian rocks near Burnie occur intrusions of dolerite which have been dated at 700m. years old.

At some localities, for example to the east of Rocky Cape, the presence of large-scale current bedding and good sorting in the unmetamorphosed sandstone suggest a well-worked, shallow-water environment of deposition. In other areas, such as Burnie, the monotonous repetition of thin, poorly sorted but graded sandstone layers, with well-developed sole markings and small-scale current bedding, is typical of sediment dumped by turbidity currents where normally mud accumulated.

The most spectacular large contortions in the Precambrian are the recumbent folds of many miles extent encountered in the unmetamorphosed sequences of the north-west sea coast. However, in the rocks of the metamorphosed assemblages, even the microscopic features have been determined by complicated deformations.

Successions including volcanic rocks at Corinna, tillite at King Island and dolomite at Smithton, Jane River, Savage River, Tim Shea and Hastings, are possibly Precambrian. The thicker dolomite accumulations may be of the same age and perhaps represent the youngest Precambrian deposit. Economically important mineral deposits, such as tin at Renison Bell and Mt. Bischoff, are associated with dolomite and adjacent quartz sandstone, which accumulated in a comparatively stable, well-worked shallow water area. These deposits reflect a marked contrast in depositional environment to the younger Cambrian rocks.

Cambrian System

Fossiliferous Cambrian rocks, which have yielded trilobites of some 550m. years age, are of turbidite sequences thousands of feet thick, and comprise the Dundas Group. These sedimentary rocks are indicative of unstable deepening basins of deposition. Vulcanism occurred a number of times during the period. Cambrian rocks occupy a meridional belt from Elliot Bay on the south-west coast, through Rosebery to Waratah; smaller meridional belts from near Smithton on the far north-west coast to some 20 miles inland; and from Ulverstone on the north coast to Gunns Plain some 30 miles to the south.

In the north Pieman region in western Tasmania, there occurs a substantial unit of some 8,000 feet of volcanic rocks—Mt. Read Volcanics—which are of keratophyre, quartz porphyry and quartz feldspar porphyry associated with massive or schistose pyroclastic rocks, tuffaceous slate and ash beds. It appears likely that it may in part be Lower Cambrian and in part equivalent to Middle

Cambrian in age. The Mt. Read Volcanics at Lyell, near Queenstown, have been an important host to copper mineralisation, and substantial lead-zinc-copper ore deposits occur within it at Hercules and Rosebery.

Cambrian igneous activity is believed to include granite emplacement at Mt. Darwin and in the Murchison Gorge. Basic and ultrabasic rocks, which range in composition from quartz-mica gabbro to dunites, occur as slightly transgressive sills and rare dykes in Cambrian and Precambrian rocks. An interesting occurrence of serpentinite near Adamsfield is overlain by conglomerate, sandstone and siltstone composed of serpentinite detritus with placer deposits of chromite and osmiridium.

Ordovician System

Ordovician rocks 440-500m. years old may attain a maximum thickness of 7,500 feet, and are well represented on the sites of the Cambrian meridional belts along the West Coast Range, and in the Dial Range in the Ulverstone area from where it extends south. Ordovician successions are unknown in the far north-west, but part of the Mathinna Beds of the north-east may be of this age.

Beds of the Ordovician System usually rest on the Cambrian unconformably, although conformable relationships have been reported. Reconstruction of the land surface during the accumulation of the basal Ordovician deposits along the West Coast Range, indicates that the eastern margin of the earlier Cambrian trough continued to rise with steep tilting of the Cambrian rocks, giving rise to changes of slope adequate for the rapid accumulation of wedge-shaped fanglomerates. Following these basal fanglomerates at some places disconformably, and at other localities conformably, is a unit of up to 2,400 feet thick known as the Owen Conglomerate. The Owen Conglomerate consists of siliceous conglomerate which gathered as continental alluvial fans against a Precambrian highland to the east. However, marine beds within the top part of the unit indicate the encroachment of the sea into the area. Flanking the West Coast Range is the fossiliferous Gordon Limestone which was formed in shallow, warm seas. The widespread occurrence of the limestone, which is younger than the Owen Conglomerate, indicates that the seas at this time were at their most extensive. The geological history of the Ordovician rocks in the Devonport area is similar to that of the West Coast Range. The Gordon Limestone, which ranges in age into the Upper Ordovician, is followed conformably by Silurian rocks.

Silurian—Devonian System

In central and western Tasmania, the Silurian and Devonian rocks constitute the Eldon Group ranging in age between 375 and 440m. years. The group shows a distribution closely associated with Ordovician occurrences. Some 5,000 feet of sandstone and mudstone accumulated in the Zeehan area whereas 12,000 feet were deposited near Queenstown. In general, the coarser sedimentary rocks of the Eldon Group appear to have accumulated in a well-worked shelf area in shallow seas, whereas the finer beds collected in quieter waters and perhaps reflect relative changes in sea levels and elevations of the land of the source area.

Underlying extensive areas in north-east Tasmania are the Mathinna Beds which contain marine fossils and are regarded as probably of Silurian-Devonian age. Two types of sequence have been noted—one originally of mudstone as at Bangor where slate has been quarried, and the other of interbedded mudstone and thin turbidite sandstone layers varying considerably

in composition. The former sequences are believed to be the older and are of material normal to the basin of deposition, whereas, during the accumulation of the younger successions, the settling of mud was frequently interrupted by turbidity currents depositing sands.

No rocks have been identified with certainty as belonging to the Silurian period in the Devonport area, but quarrying at Eugenana has exposed important terrestrial cavern fillings in Gordon Limestone which, from a study of their spore content, have been referred to the Middle Devonian. The importance of this deposit is in the fact that the beds show no tectonic disturbance, although the caverns occur in folded Gordon Limestone and blocks of distorted enclosing rock occur within the deposits. It is therefore evident that there was a notable deformation of the rocks before Middle Devonian times. This period of deformation, which was very widespread, is known as the Tabberabberan Orogeny.

Tabberabberan folds of regional scale form an arc from Queenstown in western Tasmania, where they trend north to south, to the Sheffield area where they are directed east to west approximately parallel to the north coast. Locally, these broad structures are obscured by other fold and fault trends. In north-east Tasmania, the Tabberabberan Orogeny is represented by NNW trending folds.

Granite Emplacement and Associated Ore Deposits

Apart from a number of minor basic dykes, many granitic masses were emplaced in the rocks after the Tabberabberan Orogeny. The commonest is a coarse grey granodiorite, which forms the largest mass in the State at Blue Tier in north-east Tasmania, whereas red potassic granite, as at Coles Bay in eastern Tasmania and Mt. Heemskirk in western Tasmania, is the least common.

In general, with the exception of the granites of Mounts Darwin and Murchison, the granites of Tasmania appear to be Upper Devonian-Lower Carboniferous in age; that is, very approximately 350m. years old. They are characterised by cross-cutting relationships with the country rock, fairly sharp margins and narrow metamorphic aureoles, although extensive mineralisation is associated with their emplacement. At King Island, introduction of material into the metamorphic aureole of a granodiorite body has resulted in scheelite occurrences within originally impure limestone and mudstone of possibly Precambrian age. Cassiterite-wolframite vein systems are associated with granite intrusions at the Aberfoyle and Storys Creek district in north-east Tasmania. Tin-bearing sulphide bodies occur in association at Mt. Bischoff, Renison Bell and Mt. Cleveland in western Tasmania, while galena-sphalerite lodes in the Zeehan and Dundas areas of western Tasmania and in the Round Mount area near Sheffield appear to be related to granite intrusions. Cassiterite occurs within the granite at Blue Tier. The gold-quartz reefs occurring in the Palaeozoic rocks at Beaconsfield, Lefroy and Mathinna in north-east Tasmania are not obviously related to the granite occurrences.

Permian System

Prolonged erosion of the rocks followed the emplacement of the granites and continued until late Carboniferous or early Permian times. During the Permian, there was extensive glaciation of the area and many thousands of feet of deposits accumulated, with a marked unconformity between them and the underlying distorted older rocks. The Permian beds consist of fresh-water sequences separated by marine deposits.

Permian times opened about 270m. years ago with an ice centre in western or north-western Tasmania where tillite accumulated. Studies of types of erratics, and of the striae on glaciated surfaces, demonstrate that the tillite material originated from the ice erosion of these areas. Although basal tillite is absent from north-eastern and eastern Tasmania, basal units include fragments derived from western Tasmania. Basal Permian beds are followed by the Quamby Mudstone in which the distribution of coarser layers shows that north-eastern Tasmania was land, and many islands, particularly around Cradle Mountain, existed in a quiet basin of deposition which was fed by material from eastern and south-eastern Tasmania, as indicated by the existence of shore line deposits at Maria Island. Quiet deposition was occasionally disturbed by turbidity currents which deposited the sandstone layers within this dominantly mudstone sequence. The calcareous Golden Valley Group follows and shows a regional decrease in grain size to the WNW demonstrating an easterly source for these clastic deposits where the seas became shallower. Turbidite incursions occur and are represented by pebbly layers. Marine conditions, indicated by the fossils recovered, persisted throughout the Lower Permian but gave way to a dominantly fresh water environment during the formation of the Mersey Coal Measures.

The Mersey Coal Measures covered both earlier Permian highland areas and the sea-floor. Apart from thick accumulations near Avoca, Elephant's Pass, Wyld's Craig and near Hobart, there is a regional decrease in thickness to the west, south and east from Devonport. The fresh-water environment, indicated by common plant fragments, appears to have been a wide sandy coastal plain with some river channels, lakes and swamps in which collected material resulting in deposits of coal, as at Preolenna, Barn Bluff, Mount Pelion and Latrobe, and coaly layers at Barn Bluff, Preolenna, Nook and near Lilydale. Fossil occurrences show that marine incursions occurred from time to time at Hobart, Wyld's Craig, Oyster Cove and Maria Island.

The following marine calcareous sequences, which comprise the Cascades Group, are more widespread than any of the older Permian rocks for they extend almost to the north-eastern part of the island. In this succession, quartz sand and erratics, dropped from floating icebergs, become more prominent in western and north-western Tasmania whereas, to the south and east of Hobart, limestone passes into the Grange Mudstone. Silt accumulation of the Malbina Formation followed the Cascades Group in the Hobart area on a relatively deep sea floor. Pebbles of western derivation were dropped from icebergs contaminating the silt deposits, and occasional turbidity currents from probably a northern direction deposited sands. The Malbina Formation was succeeded by the deposition of a thick marine mudstone sequence, the Fern-tree Mudstone.

Permian marine conditions once more gave way to a fresh-water environment during the formation of the Cygnet Coal Measures. Sandy plains extended across much of Tasmania except in the north-east and far north-west during these times. Lakes and swamps with peat formations occurred in the north-western and south-eastern parts. Although the Cygnet Coal Measures are widely distributed, they are discontinuous, due to erosion prior to the deposition of the younger Triassic deposits.

Triassic System

Up to 2,000 feet of rocks represent the fresh-water lake and river sedimentary deposits of Triassic times (from 180 to 225m. years ago). East of a line between Ida Bay in southern Tasmania and Poatina in the Western Tiers, a disconformity occurs between rocks of the Permian and Triassic Systems. The

discordance may be represented by either Permian boulders occurring in the basal Triassic conglomerate, or by differences in dips of the beds. To the west of the Ida Bay-Poatina line, there is a transition, representing continuous deposition, between concordant Permian and Triassic deposits, and similar conglomerate horizons occur within the sequences of both systems.

Commonly the base of the Triassic sequences is represented by up to 50 feet of granule conglomerate and quartzose sandstone, with usually an argillaceous cement. Large-scale current bedding, indicative of a shallow water environment of deposition, shows in many cases a supply of material in the west and north-west. The lower 200 to 1,350 feet of Triassic successions are dominated by well-sorted, medium-grained quartzose sandstone, which is usually clean in that it has but little cement. The lower sandstone sequences contain lenticular beds of conglomerate, some of rounded quartzite pebbles and others of clay pellets, mudstone bands, carbonaceous lenses and mica-rich layers. Shallow-water sedimentary structures are common, and include large-scale current bedding and mud-cracks.

The upper part of Triassic sequences is often represented by some 60-600 feet of clean sandstone consisting of rock fragments, including those of volcanic origin, as well as of quartz, feldspar and mica. Often thick shale and coal horizons are associated with the sandstone sequences, and it is evident that deposition of transported carbonaceous and inorganic material in a number of small lakes, which varied their position, resulted in the formation of lenticular coal seams of very variable thickness. The thickest recorded coal seam is 18 feet and as many as eight seams occur in some districts. The coal is of economic interest and has been mined in such areas as Avoca-Fingal-St. Marys and Hamilton.

Abundant plant remains have been recorded from Triassic rocks, and vertebrates, including reptiles, insects and some brachiopods have also been noted. Studies of megaspores have shown that deposits at St. Marys are of the uppermost Triassic and that passage deposits of Lower Jurassic times exist.

Dolerite and Syenite Intrusion

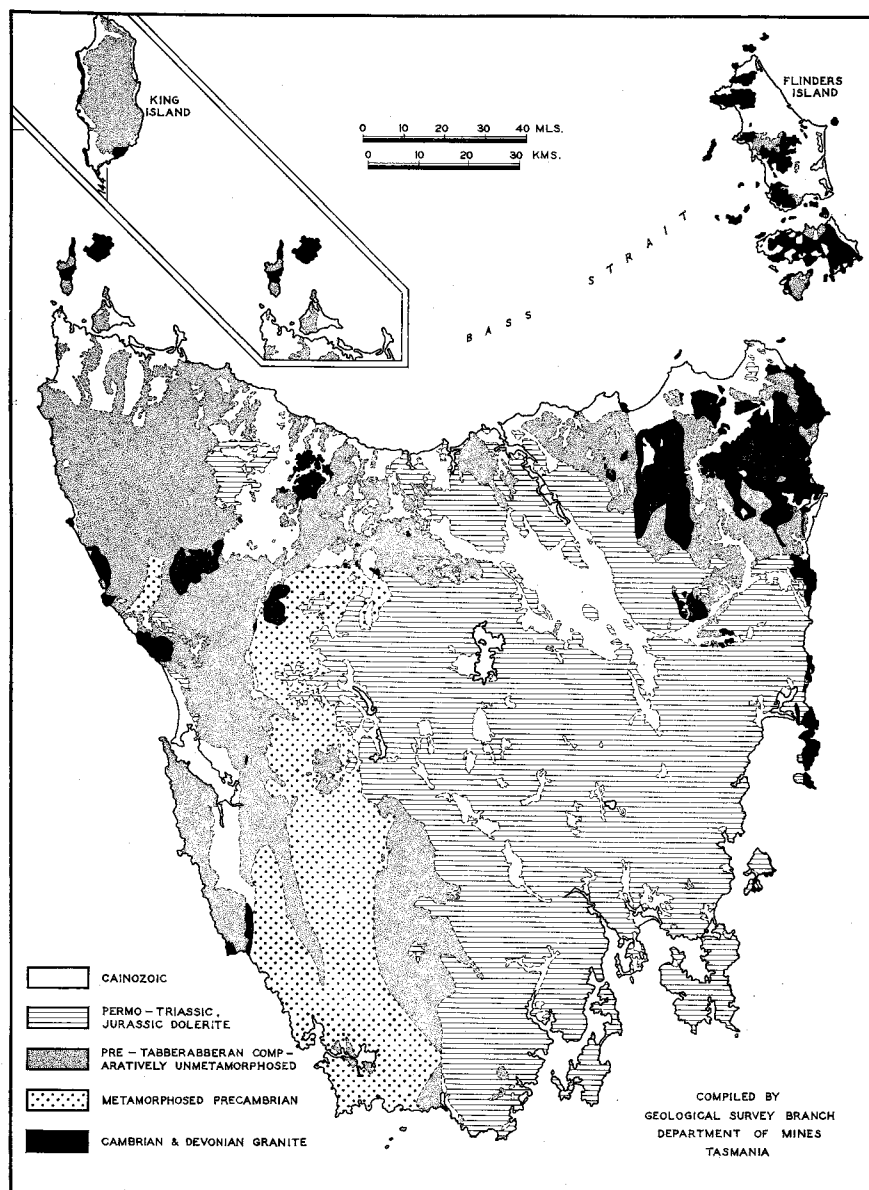
A thick mass of dolerite which has intruded Triassic and older rocks, underlies the Central Plateau and caps most of the highest mountains in Tasmania. The dolerite mass is of gently inclined interconnected sheets of about 1,500 feet thickness but near-vertical dykes are found. A study of the fine-grained chilled dolerite margins of a number of sheets indicates that the original undifferentiated magma was uniform. The period of igneous activity has been dated at 165m. years, which is of the Middle Jurassic period. Away from the contacts, the dolerite is usually medium-grained, but coarse pegmatitic segregations are found within several hundred feet of the upper margins of the intrusions. Associated with these basic igneous rocks are acid differentiates which have abundant quartz and potassic feldspar, such as the granophyre at Red Hill near Snug in southern Tasmania, and in the Great Lake sheet.

The form of the dolerite occurrences suggests a number of coalescing shallow cone sheets which appear as inclinations dipping at about 40° below the Permian rocks, whereas, in the Permian, dips are at 25° or less, and are as little as 10° within the Triassic. The cones centre on a number of points.

Syenite stocks and related dykes intrude the Jurassic dolerite and Permian sedimentary rocks near Port Cygnet, and they have been dated as 100m. years old, which is of the Middle Cretaceous period.

Tertiary System

Towards the end of the Mesozoic Era some 70m. years ago, Tasmania was a part of the Australian continent and had a low relief. Tertiary times began when marsupial animals and flowering plants appeared, and block faulting gave Tasmania its present day shape. The faulting caused troughs of a trend commonly between North West and North in which are preserved thick sequences of non-marine Cainozoic rocks. Fault activity has continued and historical evidence predicates present-day movements.



The separation of Tasmania from the Australian Mainland is believed to have been completed between 25 to 40 m. years ago, since isolated occurrences of marine limestone of that age occur near the coast in north-western Tasmania between Granville Harbour and Wynyard, on King Island and in the Furneaux Group.

Thick non-marine Cainozoic sequences have been preserved in a number of troughs, and dating has depended on palynological evidence, for although plant remains are common and varied, animal remains are rare. In the Launceston area some 900 feet of clay, sand and gravel with bands of lignite accumulated, and the earliest deposit appears to be between 40 to 70m. years old. The trough is believed to have been filled over a long period of time under predominantly shallow water conditions since large-scale current-bedding and other shallow water features occur. In the Derwent trough, hundreds of feet of mudstone, sandstone and coarser rocks comprise the sequence, and palynological evidence suggests the deposits are younger than 40m. years. Some of the sedimentary rocks overlie basalt. In the Macquarie Harbour trough, over 700 feet of clay, lignite, silt and unconsolidated sand and conglomerate have been reported. Two carbonaceous horizons occur containing plant remains, suggesting an age, from 1 to 11m. years old.

Basalt is extensive, particularly in north-western Tasmania, and Tertiary clay, silt, sand and gravel are often preserved beneath it. These sub-basalt sediments, together with the river deposits of more recent times, may contain gold and tin minerals of economic interest as in north-eastern Tasmania. The basalt outpourings have been related to some 30 volcanic centres, and most examples exhibit rugged topography diverting and displacing river systems. Of interest is the occurrence of inter-basalt fossil forests in the Macquarie Plains-Glenora area.

Erosion Surfaces and the Quaternary System

There are a number of major erosion surfaces. The youngest, which is at 300-900 feet above sea level, cuts rocks some 20m. years old but is overlain in places by deposits probably not much older than 25,000 years. The oldest surface at some 3,900-4,400 feet is possibly Cretaceous in age. Tabular land forms dependent on erosion-resistant rocks resulted from the block faulting of subhorizontal Jurassic dolerite and Permo-Triassic rocks, that are drained along rectangular patterns, which have been determined by joint and fault lines.

During Pleistocene times, the regional snowline now absent even above 5,000 feet, lay between 3,000 and 4,000 feet rising from west to east. Plateau glaciers occurred at the north-western section of the Central Plateau, the West Coast Range between Drys Bluff and Great Lake, between Great Lake and Bradys Lookout, Ben Lomond, and on the King William Range. At the head of the Linda Valley, wood found in glacial varves has given a radio carbon date of $26,480 \pm 800$ years. Elsewhere in the State, glacial ice was formed in cirques rather than on plateau surfaces, and the most spectacular of the cirque-cut mountains are Frenchman's Cap, Mt. Anne, Mt. La Perouse, Federation Peak and the Frankland and Arthur Ranges, where horn peaks, aretes and glacial troughs occur.

Down to 2,000 feet, soils and land forms in Tasmania are related to periglacial and glacial processes of Pleistocene times. However, periglacial features are still active and result from semi-perennial snow accumulations, which are usually above 3,800 feet.

Streams too small for the valleys which contain them are common, especially in south-eastern Tasmania. The large valleys probably resulted from the great volumes of water carried during Pleistocene times.

The present-day coastal platform is made up of a number of levels reflecting older sea levels. However, post-glacial seas appear to have reached a level about only two to six feet higher than the present sea.

Mining in Tasmania

A history of Tasmanian mining and a description of present mine output is contained in Chapter 7, "Primary Industries—Non-rural".

(The geological section was written by Emyr Williams, B.Sc., Ph.D., F.G.S.)

THE FAUNA OF TASMANIA

Historical—Study of Tasmanian Fauna

Introduction: Apart from certain of the more conspicuous groups, the fauna of Tasmania is comparatively little known. The groups of animals which are large, easy to observe and those which impinge upon human activities are fairly well understood from the taxonomic standpoint, but much remains to be done in the ecological field in relation to these species.

The invertebrates have been little studied and much remains to be done in groups such as the earthworms, while the nematodes are almost unknown. Some of the groups which have been investigated in the past are badly in need of taxonomic revision in relation to modern developments in this discipline.

Perhaps one of the reasons for this ignorance of our fauna lies in the fact that there have been no large collecting expeditions operating in Tasmania, and much of the descriptive taxonomic work has been the result of either sporadic short expeditions or the long-time plodding of individuals.

Early Expeditions: Many of the early expeditions to Australia visited Tasmania, e.g. Furneaux (1773), Cook (1777) and D'Entrecasteaux (1792 and 1793). All of these made collections of varying importance but the material collected was either marine in origin or else coastal in nature. It is unfortunate that many of the taxonomic types of these early expeditions have been lost or mislaid. The early zoological investigations were largely undertaken by the French when Baudin, with Peron and Maugé, followed the D'Entrecasteaux expedition in 1802. Darwin visited Hobart in 1837 and, incidentally, was not impressed with Mt. Wellington. The French followed again in 1827 and 1839 when d'Urville called here, and this latter navigator started the great stream of Antarctic expeditions which have used Tasmania as a jumping-off point and as a place to test their gear. The results of their efforts on our coasts were incorporated in the reports of the various expeditions.

The greatest of the marine expeditions, that of the *Challenger*, dredged in the waters of Bass Strait and this expedition, together with the several Antarctic expeditions, furnished the basis for much of our knowledge of the Tasmanian marine fauna.

Royal Society: A strong stimulus to zoology was given by the very early formation of the Royal Society of Tasmania, which has published a journal continuously since 1849 and, through this medium, has communicated the work of local scientists to other workers. The regular meetings of the Society gave the added stimulus of discussion and criticism of work. Indeed the Royal

Society of Tasmania gave even further impetus to science as a whole by opening a Museum in 1844 (which ultimately became the Tasmanian Museum), and one cannot praise too highly the impact that this young Society had upon the community.

Zoologists in Tasmania: The visits of private individuals all brought much of value to our knowledge of the zoology of Tasmania and perhaps the most noteworthy of the early visitors was John Gould who utilised his stay to collect information about the birds and mammals of Tasmania, and to produce monumental and artistically beautiful books on these animals.

The development of the colony from 1850 saw the appearance of a number of local workers, some amateur, whose tradition is still continued today. Johnston, Morton, Petterd, May, Scott (father and son), Lord, Littler, Sharland, Nicholls (father and son), Couchman, Flynn, V. V. Hickman, Pearson, Evans, all have contributed to our knowledge of the groups in which they found their interest.

The full development of these efforts resulted in the publication of reference works: Lord & Scott (1924) on vertebrates; Littler (1910) and Sharland (1945) on birds; May on Mollusca (1921, 1923 and 1958). In addition to these, both the Tasmanian Museum and the younger Queen Victoria Museum in Launceston are publishing handbooks on certain special groups, e.g. Davies (Whales and Seals), Guiler (Marsupials).

Throughout this century, naturalist organisations have played their own valuable part in the collection and identification of material and the Tasmanian Field Naturalists Club has conducted field camps since 1909.

Conclusion: The above review does not claim to be comprehensive but paints a picture of early expedition interests being replaced about 1850 by a strong local activity which continued into the present century, but has now shown a tendency to be channelled into laboratory studies of our fauna.

It is ironic that more is known of many of our introduced species since these, especially the vertebrates, have impinged upon human activities as pests and this necessitated a study of them so that controls could be applied.

Thus, the initial stimulus to Tasmanian zoology came from the early scientific exploring expeditions while the Antarctic expeditions of the late nineteenth and early twentieth century reinforced this stimulus. In the intermediate period, the local scientists, gaining strength from the establishment of the Royal Society of Tasmania with its journal and library, founded much of our present knowledge.

Freshwater Zoology

The zoology of freshwater is still based upon Smith's *Naturalist in Tasmania* (1909) together with more recent work by Nicholls on the Crustacea, Clark on the freshwater yabbies, Powell on the plankton of Lake St. Clair, and Nicholls, the younger, on the freshwater environment and fisheries of the State.

Mountain Shrimp: Nicholls' work upon the distribution of the ancient form *Anaspides tasmaniae*, the mountain shrimp, showed that this animal lived in mountain streams and tarns on the central massif of Tasmania but was absent from the Ben Lomond area of the north-east. Since this latter region is very similar in geological formation and in its climate to the central Highlands, we must look to other sources for the explanation. In fact, beyond the efforts of Nicholls, little has been done to investigate the ecological background of

Anaspides using modern techniques. In recent years, a giant form of *Anaspides*, specifically indistinguishable from *tasmaniae*, has been found in a lake near the upper reaches of the Huon River.

Anaspides is a representative of the order Syncarida, a primitive group of crustacean. Two other syncarids occur in Tasmania, namely *Paranaspides lacustris* and *Micraspides calmani*. *Paranaspides* is smaller than *Anaspides* and is found in the Great Lake and associated waterways, while *Micraspides* is the smallest of the group and is found in bogs on the west coast.

A most interesting group of crustacea which is common in many places is the *Phreatoicoidea*. These belong to the order Isopoda but have the external shape of an amphipod. Over twenty species have been recorded in areas ranging from mountain tops to sea level.

Yabby: The large yabby, *Astacopsis gouldi*, occurs only in the northern streams and may reach a weight of 9 lbs. and measure 16 inches in length. Specimens of this size are rarely caught nowadays. The yabbies of other streams are smaller and are representatives of four other genera and some thirteen species.

An unusual freshwater medusa, *Craspedacusta sowerbyi* has been recorded in Tasmania and this species, together with a sponge, *Spongilla fluviatilis* add further interest to the fauna.

Fish: The fishes of freshwater are dominated by introduced species, namely brown and rainbow trout, perch, tench and carp. The native galaxiids, however, are still common, especially in the smaller creeks and are represented by about 12 species. The blackfish, *Gadopsis marmoratus*, is found in rivers flowing into Bass Strait and in the Arthur River flowing to the west coast. It spread into the latter system due to the capture of a stream by the Arthur system. The species has been introduced into southern rivers. The cucumber herring, *Prototroctes maraena* and the freshwater flathead, *Pseudaphritis urvillii*, are other noteworthy species.

The importance of angling has led to intensive surveys of rivers and streams and the continuation of this work will yield important results in freshwater zoology, not only in relation to fish and fishing but also to more academic aspects.

Amphibia: It is appropriate at this stage to consider the amphibia. The Leptodactylidae and Hylidae are the only families recorded in Tasmania. The former is represented by the genera *Crinia* (3 sp.), *Limnodynastes* (3 sp.) and *Pseudophryne* (1 sp.), and the latter, by the genus *Hyla* (3 sp.). Only two species appear to be endemic. The diet, development and distribution of most of the species is poorly known.

Marine Zoology

The marine fauna is somewhat better known than the terrestrial but nevertheless there are many groups still undescribed. The Mollusca, largely due to May and Petterd, are well known as are the Fishes; the Crustacea are partially known, but outside these groups there are many gaps in our knowledge.

The Tasmanian marine fauna forms a province, the Maugean, sharing its species with the coasts of southern Victoria. Species from New South Wales are found here but many of them are not of comparable importance in this

State, e.g. the large beds of "cunjevoi", *Pyura praeputialis*, are not nearly as well developed in Tasmania. The kelps, *Macrocystis pyrifera* and *Sarcophycus potatozum*, are characteristic of exposed coasts in Tasmania.

The shores are under the influence of the East Australian current which washes the east coast while the west receives waters from the Australian Bight and the westerly drift. Each of these water masses brings its characteristic fauna and many planctonic or pelagic subtropical or warm temperate species appear on our coasts, perhaps the most interesting being the turtles. These reptiles are stranded only on west and south coast beaches. Another interesting and spectacular form is the mollusc *Argonauta nodosa* which is stranded in large numbers on Flinders Island after protracted westerly gales.

Whales: Tasmania is fortunately placed with regard to whale strandings and many interesting and rare species occur here from time to time. The pygmy right whale, *Caperea marginata*, has been found stranded in Tasmania on 14 occasions and must occur in our offshore waters, as do the rare goose-beaked whale, *Ziphius cavirostris*, strap-toothed whale, *Mesoplodon layardi*, and right whale dolphin, *Lissodelphus peroni*. One specimen of Blainville's beaked whale, *Mesoplodon densirostris*, was recovered from a west coast beach in 1964 and this is the only Australian record of the species south of Townsville, Queensland.

Whales are not an uncommon sight in our seas and humpback whales, *Megaptera novaeangliae*, rorquals, *Balaenoptera acutorostrata*, and sperm whales, *Physeter catodon*, are to be seen about the coasts. In addition, fur seals are present as resident breeders and antarctic visitors, such as elephant seals and leopard seals, are not unusual.

Terrestrial Fauna

The terrestrial fauna is not rich by continental Australian standards but it furnishes several interesting points.

Snakes: The snakes are all of continental species, namely the tiger snake, *Notechis scutatus*, the copperhead, *Denisonia superba* and the whipsnake, *D. coronoides*. The tiger snake is very variable in colour, and as the yellow markings may be obscured, is frequently called the black snake. Several of the islands of the Furneaux Group, particularly Chappell Island, support large *Notechis* populations and varieties of subspecific rank may exist on the closely adjoining islands. Sea snakes are rarely recorded.

The snakes are widespread and this applies to much of our fauna, though the richest habitat by far is the sclerophyll forest. Here the Tasmanian terrestrial fauna reaches its peak of diversity and abundance and it is here that the greatest impact of the fauna upon human affairs takes place.

Invertebrates: Many of these land groups are imperfectly known. Some detailed work has been carried out by Turner and Couchman (Lepidoptera), Lea (Coleoptera), Hardy (Diptera) and Hickman (Araneida and Phalangida) but such groups as the Oligochaeta (Spencer, 1895) have not been investigated for many years.

Birds: The birds are now all identified and new records of occasional stragglers or visitors only can be expected. Fourteen species are purely Tasmanian, and some others may be shown to be geographical races of continental species. The native hen, *Tribonyx mortieri*, is the most noticeable of the endemic species and is to be found in open situations where it may reach such numbers as to become a pasture pest. The green rosella parrot,

Platycercus caledonicus, is a common bird, especially on the coastal scrub of the west coast. The yellow wattle bird, *Anthochaera paradoxa*, black jay, *Strepera fuliginosa* and black magpie, *Strepera arguta*, are other conspicuous and noisy members of the avian endemic fauna. The remaining endemics are dwellers of thick scrub and, as they are small in size, are not noticeable to the average observer. In addition, there are eleven species of introduced birds.

Much work is being carried out on birds and the black swan, *Cygnis atrata*, Cape Barren goose, *Cereopsis novaehollandiae*, yellow wattle bird and the native hen have been singled out for more or less intensive study. The Cape Barren goose inhabits the Furneaux Group and the population fluctuations have been observed by aerial counts since 1957.

Seabirds: The seabirds are worthy of mention as Tasmanian islands are the site of the only Australian breeding colonies of the white-capped albatross, *Diomedea cauta*, and there are three colonies of the gannet, *Sula serrator*. Muttonbirds, *Puffinus tenuirostris*, abound on various islands. Many of the seabirds of the Antarctic and sub-Antarctic seas are found off the coasts of Tasmania and some of these are washed ashore from time to time. Penguins of species known on Macquarie Island are rare visitors to our south-eastern beaches, though there is one resident species, namely the fairy penguin, *Eudyptula minor*.

Migrations: Long migrations are a feature of some of our seabirds and species such as the Arctic tern, *Sterna macrura*, Arctic skua, *Stercorarius parasiticus* and the mutton bird all make trans-equatorial migrations. This habit is not confined to marine birds as the golden plover, *Pluvialis dominicus*, snipe, *Gallinago hardwicki*, little stint, *Erolia ruficollis*, sharp-tailed sandpiper, *Erolia acuminata* and the curlew, *Numenius madagascarensis*, also move to the northern hemisphere for breeding. All the latter are waders and there would appear to be a considerable movement of these birds to Siberia, Japan and Alaska but the double-banded dotterel, *Charadrius bicinctus*, is believed to move to New Zealand for breeding, a most unusual west-east route.

Mammals: The mammals of Tasmania are represented by all three major phylogenetic groups. The Prototheria consist of the platypus, *Ornithorhynchus anatinus* and the echidna, *Tachyglossus setosus*. The latter differs specifically from the continental species by the possession of shorter spines and more fur. There are 20 species of Metatheria (Marsupialia), of which one, the sugar glider, *Petaurus breviceps*, was introduced from the continent. Seven of the remaining species are endemic but only two of these, the Tasmanian tiger and the Tasmanian devil, are not closely related to continental forms. The Eutheria are represented by the native rodents (5 species) and the six species of bats. None of the latter is common. In addition to the native Eutheria, there are a number of introduced species which have now become established as part of our fauna. These are the rabbit, hare, mouse, brown rat, black rat, feral cat, fallow deer and perhaps the ferret. It is proposed to discuss these species in a later issue of this Year Book.

The greatest interest in the terrestrial fauna has been in the mammals and the birds. The mammals are utilised for meat and fur production, as well as for sporting purposes. The brush possum, *Trichosurus vulpecula*, ringtail possum, *Pseudochirus convolutor*, wallaby, *Wallabia rufogrisea*, pademelon or scrub wallaby, *Thylogale billardieri*, and the water rat, *Hydromys chrysogaster*, are all killed for their fur during prescribed open seasons.

Shooting is provided by the wallaby and pademelon, and the introduced deer, rabbit and hare. These species provide the meat resources derived from the wild fauna of the State.

Wallaby: The wallaby is found over much of the sclerophyll forest where there is sufficient cover for the animal to hide during the day. The pademelon (scrub wallaby) is found in thicker parts of the scrub. Both these species leave the scrub at night to feed in adjoining open areas or paddocks. At present, the population of both these species is high and there is a 12 months' open season for both shooting and snaring. Particularly dense concentrations of *Wallabia* exist in the north-east and the pademelon is very numerous on the western coastal strip.

Kangaroo: It is noteworthy that the large kangaroos of the continent of Australia are represented here by only one species, *Macropus giganteus*, the Forester kangaroo. This species has a somewhat tenuous hold, its largest population being in the Gladstone-Cape Portland area of the north-east, a region which is scheduled for intensive agricultural development. Fortunately, the Forester has spread to areas on the eastern side of the Midlands and is numerous thereabouts.

Whilst discussing the kangaroos, it is necessary to mention the smaller macropods found here, namely the bettong, *Bettongia cuniculus* and the potoroo, *Potorous tridactylus*. The former of these is the scarcer and is found in open forest lands with scrub and on the fringes of the forest, whereas the potoroo is a denizen of the thicker scrub. Indeed, the distribution of these two species forms an ecological parallel with that of the wallaby and the pademelon.

Possum: The two species of possum show ecological differences in habit, the larger brush possum spending more time on the ground than the almost strictly arboreal ringtail. The latter species suffers very severely from natural population cycles. About 1951-52 the numbers of this animal fell catastrophically, and they were only recovering in 1963-64. There is no open season at present on ringtails. The brush possum occurs in a number of colour phases of which the cream and silver are the most rare. Grey and rufous are the common colours together with black, the latter being found in the more humid parts of the State, e.g. southerly aspect gullies.

Carnivores: The carnivorous marsupials are well represented both in species and numbers. The native cat, *Dasyurus quoll*, is common throughout much of the State, except on the west coast where it tends to be replaced by the larger and more savage tiger cat, *D. maculatus*. These two species, together with the Tasmanian devil, are pests of poultry yards. The Tasmanian devil, *Sarcophilus harrisi*, was once considered to be rare in Tasmania but now is very numerous and is almost in plague proportions in some parts of the country, particularly the west coast and north-east regions; it is now spreading into areas where it had not been seen in living memory, e.g. Tunnack in the lower Midlands. The Tasmanian devil performs a valuable service in the bush as a scavenger.

Thylacine: The last species of large carnivorous marsupial, the thylacine or marsupial wolf (Tasmanian tiger) is the largest of the marsupial carnivores and is undoubtedly the rarest, being one of the twelve rarest species in the world. In the early colonial days thylacines were found all over the State. Unhappily they developed sheep-killing habits; a bounty of £1 (\$2) per head (a pup was worth \$1) was paid in 1888 and this resulted in the destruction of over 2000 thylacines. The numbers declined and by 1908 the species was becoming scarce and by 1914 few were to be seen. The population decline was assisted by habitat destruction and alteration. It has been suggested that their decline was also hastened by disease, since it is clear from the available data that the areas in which thylacine were most vigorously hunted were the last

places from which they disappeared. If hunting were the sole factor responsible for their decline, then this would not be true. Evidence of the continued, if precarious, existence of the species was collected by a Tasmanian Government-sponsored expedition in 1963-4, which, however, failed to capture a specimen. Until more is known of the habits of the species, it is very difficult to plan a programme for its conservation and rehabilitation.

Other Marsupials: The other ground-dwelling marsupials are the wombat, *Phascolomys ursinus*, barred bandicoot, *Perameles gunnii* and the short-nosed bandicoot, *Isoodon obesulus*. The barred bandicoot lives in open plains or at the edges of open woodland whereas *Isoodon* is found in thicker scrub. Again there is the parallel in habit with the kangaroo and pademelon.

The smaller species of marsupial, the marsupial mice and pigmy possums, are little known at the present time but are believed to be more common than was formerly recognised. The same observations apply to some of the native rodents.

Monotremes: Both the platypus and the echidna are common, the latter being found in sclerophyll forests, and the former in the lakes, rivers and creeks.

Conclusion

Although the Tasmanian marsupial fauna is not rich in species, it is very rich in its numbers of individuals, due in part to the absence of any large eutherian predators, such as the dingo or fox. This richness in numbers contrasts very strongly with the situation in continental Australia where the pattern is one of species constantly becoming scarcer and even of many species having become extinct since white settlement. Our relative freedom from animal introductions is an important factor in this and contrasts strongly with the situation in other countries, notably New Zealand, where introduced species are of pest proportions.

Tasmania is fortunate in that there exists an extensive system of sanctuaries and national parks within which the animals can remain undisturbed. In recent years, it has been recognised that the reservation of habitat is the most important feature of conservation programmes. It is unfortunate that our habitat with the greatest range of species and wealth of numbers, namely the sclerophyll forest, is the very region where the greatest agricultural development is taking place. It is even more unfortunate that there are few sanctuaries which contain large areas of this favourable environment. As a conservation measure, a policy of reserved areas has been commenced whereby land is declared to be reserved for wildlife. Such areas, although not sanctuaries, are to provide a habitat for all times.

The fauna of Tasmania, while not having the richness of its counterparts in other States, nevertheless, on account of its insular environment, is suited to conservation programmes. These are being attempted and will be continued into the future.

(The section on Fauna was written by E. R. Guiler, B.Sc., Ph.D., F.Z.S., M.I. Biol., University of Tasmania.)

Chapter 3

GOVERNMENT AND ADMINISTRATION

GOVERNMENT IN TASMANIA

Historical Summary

In its short history, Tasmania has experienced diverse modes of government; beginning with autocratic rule, it graduated to responsible self-government as a British colony and finally surrendered some sovereign powers to take its place as an original State of the Australian Commonwealth.

The evolution of the system of bi-cameral responsible government within a Federal system falls into five distinct phases:

1803-1825: The island was part of the colony of New South Wales and its Lieutenant Governors and Commandants were subordinate to the Governor in Sydney.

1825-1851: On 14th July, 1825, Van Diemen's Land was created a separate colony with a Lieutenant Governor directly responsible to the Secretary of State in London. A nominated Legislative Council was established.

1851-1856: The passage of the *Australian Constitution Act* 1850 by the Parliament in London was followed by the establishment of a new Legislative Council in which sixteen members were elected and eight were nominees of the Lieutenant Governor; the newly constituted Council first sat on 1st January, 1852.

1856-1901: By the *Constitution Act* 1854, two Houses of Parliament, the House of Assembly and the Legislative Council were established, both houses being elected. The first Parliament sat on 2nd December, 1856 (the first year in which the island was officially called Tasmania) and subsequent representatives of the Crown carried the title of Governor.

1901: The Tasmanian Constitution has been limited by the establishment of the Commonwealth Constitution. (The *Commonwealth of Australia Constitution Act* 1900 granted legislative and executive powers upon certain specified matters to the Commonwealth Parliament and Government, some of them exclusively, and provision was made that, in the case of inconsistency of valid laws, the Commonwealth law should prevail.) In effect, the Parliament of Tasmania may make laws operative within the State upon all matters not within the exclusive power of the Commonwealth Parliament but, upon some of these matters, the Tasmanian law may be superseded by the passing of a Commonwealth Act. The Commonwealth Government was established in 1901.

Introduction

Government in Tasmania is exercised at three levels:

1. The Commonwealth, with authority based on a written constitution, and centred in Canberra.

2. The State, with residual powers and centred in Hobart.
3. The Cities and Municipalities, with authority derived from a State Act, and operating in forty nine sub-divisions of the State.

This chapter deals primarily with the State Government and with Tasmanian representation in the Commonwealth Parliament. The administration of the cities and municipalities is described in Chapter 4, "Local Government."

Tasmanian Representation in Commonwealth Parliament

The Parliament of the Commonwealth of Australia consists of the Queen, a Senate and a House of Representatives. The Queen is represented in Australia by the Governor General.

The Senate

The founders of the Australian Constitution had in mind that the Senate should give expression to the interests of the States as partners in the federation; in other words, the Senate should be a States' House. Accordingly the proportional representation suggested by the varying populations of the States was disregarded, and it was provided that each State should be represented by six senators; the first Senate in the first Parliament comprised thirty-six members of whom six represented Tasmania. The numbers remained unchanged till the Commonwealth *Representation Act* 1948 when each State became eligible to elect ten senators.

The founders also envisaged the Senate as a House of Review and accordingly provided for continuity of membership by requiring only one-half of the Senate to retire every three years, and for each senator's term to be six years. If the normal pattern of three-yearly rotational retirement is broken by a double dissolution of both Houses, provision exists to elect a complete Senate with members divided into two equal classes: senators of the first class with a three-year term and senators of the second class with a six-year term. (The basis for this classification is the order in which the senators are declared elected.) After a normal rotational election, senators' terms commence from the following first day of July; in the case of an election for the whole Senate, terms commence from the first day of July preceding the election.

The House of Representatives

In designing the House of Representatives, the founders envisaged a legislative body representing the national interest and provided that the numbers of members chosen in the several States must be in proportion to population, but that no original State should have less than five members. The first House of Representatives in 1901 had 75 members of whom five were elected in Tasmania.

The *Representation Act* 1948 increased the Senate to 60 members and increased the House of Representatives to 122, although only 121 were elected from the States, the Northern Territory having had a representative since 1922. The present House of Representatives stands at 124 members, 122 from the States and two representing the Northern Territory and the Australian Capital Territory respectively. Throughout the whole period since Federation, Tasmanian representation has remained constant at five members.

Representation of the other States now is: N.S.W., 46; Victoria, 33; Queensland, 18; South Australia, 11; Western Australia, nine.

The term of office for a member of the House of Representatives is three years unless the House is dissolved earlier by the Governor General.

Qualifications of Voters for Commonwealth Elections

An elector on a Federal roll is entitled and required by law to vote both in elections for the House of Representatives and for the Senate. An elector is any person, male or female, aged at least twenty-one years who is a British subject, who has lived in Australia for six months continuously and whose name appears on the roll. Residence in an electoral sub-division for at least one month is necessary to enable a qualified person to enrol. Enrolment is compulsory.

Qualifications of Candidates—Either Federal House

Qualifications necessary for membership of either House of the Commonwealth Parliament are possessed by any British subject, twenty-one years of age or over, who has resided in the Commonwealth for at least three years and who is, or who is qualified to become, an elector of the Commonwealth.

Disqualification as Elector or Member

Grounds for disqualification as an elector include being of unsound mind, or being convicted and under sentence for offences punishable by imprisonment for a year or longer. Grounds for disqualification as a member of either House include these prohibitions and also the following: membership of the other House, being an undischarged bankrupt or insolvent, holding office of profit under the Crown (with certain exceptions), or having pecuniary interest in any agreement with the public service of the Commonwealth except as a member of an incorporated company of more than 25 persons.

Senate (Tasmanian Members)

The following lists the Senators for Tasmania and shows, in parenthesis, the years of retirement:

Devitt, D. M. (1971); Henty, The Hon. N. H. D. (1968); Lacey, R. H. (1971); Lillico, A. E. D. (1971); McKenna, The Hon. N. E. (1968); Marriott, J. E. (1971); O'Byrne, J. H. (1971); Poke, A. G. (1968); Turnbull, R. J. D. (1968); Wright, R. C. (1968).

House of Representatives (Tasmanian Members)

The following lists the Tasmanian members of the House of Representatives, and shows, in parenthesis, the division each represents:

Barnard, L. H. (Bass); Davies, R. (Braddon); Gibson, A. (Denison); Pearsall, T. G. (Franklin); Duthie, G. W. A. (Wilmot).

Elections for the Senate

In Senate elections, there are only six electorates, each State being an electorate. Electors are required to cast a vote for every candidate standing within the State in order of their preference, and election of members is carried out in accordance with the principles of proportional representation by the single transferable vote (see "Elections for House of Assembly" for a description of similar electoral principles). If a vacancy occurs in the Senate, the appropriate State Government nominates a replacement who sits until the next Commonwealth general election (either for the House of Representatives or for the Senate), when an election is held to fill the vacancy.

If a senator fills a vacancy through an election held at the same time as an election for the House of Representatives, his term will be the same as if the vacating member's term were to run its full course. If the vacant seat is contested at an ordinary Senate election, then six, instead of five candidates, will be elected in the State affected and the senator last elected will fill the vacancy for a term shorter than the full six years.

Elections for the House of Representatives

The Commonwealth is divided into 124 single-member electorates and electors are required to cast a vote for every candidate standing within the electorate in order of their preference. Election of members is carried out in accordance with the principles of the absolute majority through use of the alternative vote (see "Elections for Legislative Council" for a description of similar electoral principles). If a vacancy occurs in the House of Representatives, it is filled by holding a by-election in the electorate concerned. The five Tasmanian electoral divisions are:—Denison, Franklin, Wilmot, Bass and Braddon.

Division of Powers

Under the *Commonwealth of Australia Act* 1900, the State of Tasmania surrendered part of its sovereignty and it was possible, at that point in time, to classify the totality of powers to be vested in the Commonwealth and the State as follows:

1. Exclusive powers to be exercised by the Commonwealth alone.
2. Concurrent powers to be exercised both by the Commonwealth and the State (subject to the supremacy of Commonwealth law in cases of inconsistency of laws).
3. Residual powers to be exercised by the State.

In the sixty years following the establishment of the Commonwealth of Australia, there have been considerable changes in functions actually performed by the two Governments due to constitutional amendments and to inter-Governmental agreements affecting function. It will suffice, therefore, to list the main fields of activity of the Commonwealth Government today:

External affairs and diplomatic representation; maintenance of the armed forces; customs and excise; posts and telegraphs; control of broadcasting and television; control of civil aviation; repatriation of ex-servicemen; immigration; industrial arbitration for national industries; control of coinage and currency; oversea trade promotion; employment service; age, invalid and widows' pensions; national health benefits; federal territories and oversea dependencies; census and statistics; meteorological service; Commonwealth courts and police; control of banking; collection of sales and income taxes; housing assistance and war service homes; scientific and industrial research; management of State and National debt; lighthouses and navigation. (For a fuller treatment of this subject, the Constitution and the Commonwealth Year Book are recommended.)

The fields of activity of the Tasmanian Government are described in the section headed "State Departments and Authorities".

Governor

Introduction

Democratic forms of government exhibit great variety but, with regard to the selection and role of the head of State, two clearly conflicting concepts can be discerned. In the American tradition, the head of State is elected and must

necessarily play an active role in party politics. In the British tradition, the head of State is the holder of an hereditary office and is expected to be above and beyond party politics.

Tasmania follows the British tradition and accepts, as head of State, Governors appointed by its Queen whose title is "Elizabeth the Second, by the Grace of God of the United Kingdom, Australia and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith".

Authority

The Governor's authority is derived from Letters Patent (issued in 1900) under the Great Seal of the United Kingdom, from the Commissions of Appointment and from the Governor's Instructions issued under the Royal Sign Manual and Signet.

Powers and Duties

The Governor summons and prorogues Parliament; in special circumstances he may dissolve it after considering the advice of his Premier. Bills which have passed all stages in Parliament are submitted to the Governor for his assent although there are some subjects which are specifically reserved for the Royal Assent (e.g. a Bill granting land or money to the Governor). He opens each session of Parliament by outlining the legislative programme of the Government which, irrespective of its party affiliation, he refers to as "My Government", but takes no other part in the sittings of either House.

His executive powers include the appointment of Ministers of the Crown, judges and other important State officers but not those whose appointments may be made under the *Public Service Act* or other State legislation. By appointing Ministers of the Crown, the Governor creates the Executive Council of the day and he is required by his instructions to be guided by the advice of this body. Should he feel it necessary to act against the advice of the Executive Council, he may do so but the reasons for such action must be immediately reported to the Queen. The Governor's relations with the Executive Council and with Cabinet are more fully discussed in the section headed "The Cabinet and Executive Government".

The Governor has the power to pardon, reprieve and remit sentences and fines. In capital cases, he is required to seek the advice of the Executive Council and, in other cases, the advice of at least one Minister.

He also has the power to appoint a deputy to act in his stead during his temporary absence from the seat of Government, whether within or outside the State. (In Tasmania, it is usual for the Chief Justice to act as Administrator of the Government in the absence of the Governor.)

Further reference to the Governor's discretionary powers will be found under the section headed "Dissolution of Parliament". The exercise of discretionary powers emphasises the Governor's position as one above and beyond party politics and, in extreme cases, provides a safeguard of the Constitution.

On all official State occasions, he performs the ceremonial functions as the representative of the Crown, and so becomes the focal point and the unifying symbol of the community.

Present Governor

All Tasmanian Governors since the first settlement have come from the United Kingdom, although Australians, in some other States and the Commonwealth, have held the vice-regal office.

The present Governor is Lieutenant-General Sir Charles Henry Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B., a former Governor of Western Australia. A list of previous Governors follows shortly.

The Administrator

In the Letters Patent of 1900 (as amended in 1934), provision was made for a Lieutenant Governor to administer the Government in the event of the Governor's death, incapacity, removal or departure from the State. Should there be no Lieutenant Governor then appointed or should he be unable to act, the duties of the Governor were to be discharged by the Administrator. Attached to the Letters Patent was a Dormant Commission authorising the Chief Justice to act as Administrator "in the event of the death, incapacity or absence of the Governor and the Lieutenant Governor if any".

Lieutenant Governors have sometimes acted in the intervals between governorships but since 1933, it has been customary for the Chief Justice to act as Administrator in accordance with the provisions of the Dormant Commission which further nominates the next Senior Judge to act in the absence of the Chief Justice.

The present Chief Justice is Sir Stanley Burbury, K.B.E., who has already acted as Administrator in the intervals between governorships, and on other occasions.

Succession of Governors, Acting Governors, and Their Predecessors from 1803

Name	Designation	Period
(i) 1803-1825		
Lieut. John Bowen	Commandant	11.9.03-16.2.04
Colonel David Collins, R.M.	Lieutenant Governor	16.2.04-24.3.10
Lieut. Edward Lord, R.M.	Commandant	24.3.10- 8.7.10
Captain J. Murray, 73rd Regt.	Commandant	8.7.10-20.2.12
Major A. Geils, 73rd Regt. (a)	Commandant	20.2.12- 4.2.13
Colonel Thomas Davey, R.M.	Lieutenant Governor	4.2.13- 9.4.17
Colonel William Sorell	Lieutenant Governor	9.4.17-14.5.24
Colonel George Arthur (b)	Lieutenant Governor	14.5.24-3.12.25
(ii) 1825-1855		
Colonel George Arthur (b)	Lieutenant Governor	6.12.25-29.10.36
Lieut. K. Snodgrass	Administrator	1.11.36- 5.1.37
Sir J. Franklin, KCH, R.N.	Lieutenant Governor	6.1.37- 21.8.43
Sir J. E. E. Wilmot, Bart.	Lieutenant Governor	21.8.43-13.10.46
C. J. La Trobe, Esq.	Administrator	13.10.46- 25.1.47
Sir W. T. Denison, Kt.	Lieutenant Governor	26.1.47- 8.1.55

Succession of Governors, Acting Governors and Their Predecessors—*continued*

Name	Designation	Period
(iii) 1855-1900		
Sir H. E. Fox Young, Kt. (c)	Governor	8.1.55-10.12.61
Colonel Thomas Gore Browne, CB ..	Governor	11.12.61-30.12.68
Lt.-Col. W. C. Trevor, CB	Administrator	30.12.68- 15.1.69
Charles Du Cane, Esq.	Governor	15.1.69-28.11.74
Hon. Sir Francis Smith, CJ	Administrator	30.11.74- 13.1.75
F. A. Weld, Esq.	Governor	13.1.75- 5.4.80
Hon. Sir Francis Smith, CJ	Administrator	6.4.80-21.10.80
Lt.-General Sir J. H. Lefroy, KCMG, CB	Administrator	21.10.80- 7.12.81
Sir G. C. Strahan, RA, KCMG	Governor	7.12.81-28.10.86
Hon. W. R. Giblin, Esq. SJ	Administrator	29.10.86-18.11.86
Hon. Sir W. L. Dobson, Kt., CJ	Administrator	18.11.86- 11.3.87
Sir R. G. C. Hamilton, KCB	Governor	11.3.87-30.11.92
Sir W. L. Dobson, Kt.	Administrator	1.12.92- 8.8.93
Rt. Hon. J. W. Joseph, Viscount Gormanston, KCMG	Governor	8.8.93- 14.8.00
(iv) 1900-		
Sir John Dodds, KCMG (d)	Administrator	14.8.00- 8.11.01
Sir A. E. Havelock, GCSI, GCME, GCIE	Governor	8.11.01- 16.4.04
Sir John Dodds, KCMG	Lieutenant Governor	16.4.04-28.10.04
Sir G. Strickland, KCMG	Governor	28.10.04- 20.5.09
Sir John Dodds, KCMG	Lieutenant Governor	21.5.09- 29.9.09
Sir Harry Barron, KCMG, CVO	Governor	29.9.09- 8.3.13
Sir John Dodds, KCMG	Lieutenant Governor	10.3.13- 4.6.13
Sir William Ellison-Macartney, KCMG	Governor	4.6.13- 31.3.17
Sir Herbert Nicholls, Kt.	Administrator	1.4.17- 6.7.17
Sir F. A. Newdigate Newdegate, KCMG	Governor	6.7.17- 9.2.20
Sir Herbert Nicholls, Kt.	Administrator	9.2.20- 16.4.20
Sir W. L. Allardyce, KCMG	Governor	16.4.20- 26.1.22
Sir Herbert Nicholls, Kt.	Administrator	26.1.22-30.11.23
Hon. N. K. Ewing, Esq.	Administrator	30.11.23- 13.6.24
Sir Herbert Nicholls, Kt.	Administrator	13.6.24-23.12.24
Sir James O'Grady, KCMG	Governor	23.12.24-23.12.30
Sir Herbert Nicholls, KCMG	Lieutenant Governor	23.12.30- 4.8.33
Sir Ernest Clark, GCMG, KCB, CBE ..	Governor	4.8.33- 4.8.45
Sir John Morris, Kt.	Administrator	4.8.45-24.12.45
Admiral Sir Hugh Binney, KCB, KCMG, DSO	Governor	24.12.45- 8.5.51
Sir John Morris, KCMG	Administrator	9.5.51- 22.8.51
Rt. Hon. Sir Ronald Cross, Bart. KCMG, KCVO	Governor	23.8.51- 4.6.58
Hon. Sir Stanley Burbury, KBE	Administrator	5.6.58-21.10.59
Rt. Hon. the Lord Rowallan, Kt., KBE, MC	Governor	21.10.59- 25.3.63
Hon. Sir Stanley Burbury, KBE	Administrator	25.3.63- 24.9.63
Lt.-General Sir Charles Gairdner, KCMG, KCVO, KBE, CB	Governor	24.9.63-

- (a) Until 1st July, 1812, the island was divided at the 42nd parallel and the Launceston settlement had its own officials appointed from N.S.W. The first was Lieut-Colonel W. Paterson (Lieutenant Governor) followed, as Commandants, by Captain J. Brabyn (N.S.W. Corps) and Major G. A. Gordon (73rd Regiment). The next Commandant, Captain J. Ritchie (73rd Regt.) assumed office on 1st July, 1812, and was subordinate to Major A. Gells.
- (b) On 3rd December, 1825, Lt.-General Sir Ralph Darling displayed in Hobart two commissions, one as Governor of N.S.W. and one as Governor of Van Diemen's Land. This was the constitutional device for separating Van Diemen's Land from N.S.W. Colonel George Arthur was sworn in again as Lieutenant Governor on 6th December, 1825.
- (c) First Governor in the era of self-government.
- (d) On 1st January, 1901, the Colony of Tasmania became a State of the Commonwealth of Australia.

The Cabinet and Executive Government*General*

In Tasmania, as in the other States and the Commonwealth, executive government is based on the system which was evolved in Britain in the 18th century, and which is generally known as "Cabinet" or "responsible" government. Its essence is that the head of the State (in Tasmania, the Governor representing Her Majesty the Queen) should perform governmental acts on the advice of his Ministers; that he should choose his principal Ministers of State from members of Parliament belonging to the party, or coalition of parties, commanding a majority in the popular House; that the Ministry so chosen should be collectively responsible to that House for the government of the country; and that the Ministry should resign if it ceases to command a majority there.

The Cabinet system operates chiefly by means of constitutional conventions, customs or understandings, and through institutions that do not form part of the legal structure of the government at all. In law, still, the executive power of the State is exercised by the Governor who is advised by the Executive Council which he himself has appointed and which meets for formal purposes, to be later explained. The whole policy of a Ministry is, in practice, determined by the Ministers of the Crown, meeting without the Governor under the chairmanship of the Premier, and this body is known as the Cabinet.

The Cabinet

This body does not form part of the legal mechanism of government and its meetings are private and deliberative. The actual Ministers of the day alone are present, no records of the meetings are made public, and the decisions taken have, in themselves, no legal effect. As Ministers are the leaders of the party commanding a majority in the House of Assembly, the Cabinet substantially controls not only the general legislative programme of Parliament, but the whole course of Parliamentary proceedings. In effect, though not in form, the Cabinet, by reason of the fact that all Ministers are members of the Executive Council, is also the dominant element in the executive government of the State. Even in summoning, proroguing or dissolving Parliament, the Governor is usually guided by the advice tendered him by the Cabinet, through the Premier, though legally the discretion is vested in the Governor.

In Tasmania, the present Cabinet consists of the nine Ministers of the Crown.

The Executive Council

This body is usually presided over by the Governor, the members thereof holding office during his pleasure. All Ministers of the Crown must be members of the Executive Council. Ministers actually remain members of the Executive Council on leaving office, but are not summoned to its meetings, for it is an essential feature of the Cabinet system that attendance should be limited to the Ministers of the day. The Chief Justice and Judges of the Supreme Court are also members of the Executive Council, but they too are not summoned to its meetings for the same reason. The meetings of the Executive Council are formal and official in character, and a record of proceedings is kept by the Clerk (who is the permanent head of the Premier's and Chief Secretary's Department). At Executive Council meetings, the decisions of Cabinet are (where necessary) given legal form, appointments made, resignations accepted, proclamations issued, and regulations and the like approved. The quorum required is three, comprising the Governor and at least two Ministers.

The Appointment of Ministers

Legally, Ministers hold office during the pleasure of the Governor. In practice, however, the discretion of the head of State in the choice of Ministers is limited by the conventions on which the Cabinet system rests. When a Ministry resigns, the Governor's custom is to send for the leader of the party which commands a majority in the lower House, and to commission him, as Premier, to "form a Ministry"—that is, to nominate other persons to be appointed as Ministers of the Crown and to serve as his colleagues in the Cabinet.

The *Constitution Act* 1854 defined the Parliament of Tasmania as "the Governor and the Legislative Council and House of Assembly together". Although no legal requirements enforce it, the selection of all Ministers of the Crown from Parliament seems to stem, not only from the British tradition, but also from the logic of a situation in which Parliament's approval is required for the passage of all legislation.

The Governor's power to revoke the appointment of a Minister of the Crown was exercised in 1959, the circumstances being that a Minister had refused to resign from Cabinet; in the absence of the Governor, and on the advice of the Premier, the Administrator terminated the Minister's appointment.

Comparison of American and Australian Systems of Government

In both the American and Australian systems of government, a triple division of functions is recognised and specified as (i) legislative; (ii) executive; (iii) judicial. The United States, in its constitution, provides for a separation of these functions and the election of the President (i.e. the executive) is an event clearly separated from the election of the Congress (i.e. the legislative); individual States of the Union follow similar principles, electing Governors to exercise executive functions.

In the Australian system, the Governor General (or, in the case of the States, the Governor) is theoretically vested with all executive power but, in accordance with the British practice of constitutional monarchy, he exercises such power strictly in accordance with the advice of his Ministers; again, in conformity with British tradition, such Ministers must be members of the elected legislature and drawn from the party (or coalition of parties) which commands a majority in the lower house of the legislature. So, in actual practice, there is no rigid division of executive and legislative functions and the Australian elector, in choosing his legislators, is also ultimately choosing his executive.

Given that the Prime Minister (or, in the case of the States, the Premier) is the *de facto* principal executive officer, the Australian elector does not directly vote to choose him. Leaders of parties are chosen by party machinery and the Australian elector knows, in advance, that a majority for a given party will result in its leader becoming Prime Minister (or, in the case of the States, Premier); in the matter of election to Parliament, party leaders have no special privilege and must submit themselves to the electors in precisely the same manner as any "rank and file" candidate for the legislature (i.e. they are required to stand for an electorate). It is not unprecedented for the leader of an Australian party to be rejected by the voters in his own electorate and to lose his seat in the Federal Parliament—this happened in 1929 and in 1964.

It will also be observed that Australian Cabinets, both State and Federal, are appointed from members of the legislature. Thus, the executive—the Cabinet—is part of the legislature and its members are readily available at sittings of the Parliament to accept responsibility for executive actions; the

chain of responsibility can be seen at two levels, namely Cabinet responsible to Parliament and Parliament responsible to the electors. By way of contrast, the President of the U.S.A. selects a cabinet whose members do not form part of the legislature and who may quite possibly never have been members of any legislature, State or Federal.

These differences between the two concepts of government give the Australian system one advantage—it is impossible to have a sustained clash between those exercising executive and legislative functions; if the Cabinet loses the confidence of the Parliament, then the government collapses. In the American situation, such a sustained clash is possible since the ordinary Congressional elections, held half-way through a President's four-year term of office, may create a situation in which the executive is of one party while the legislature is dominated by the opposing party. When such a situation arises, there is no provision for changing the executive to accord with the weight of majority opinion in the legislature.

Present Ministry

After the elections held on 2nd May, 1964, the Labor Ministry led by the Hon. E. E. Reece, was announced as follows:

Ministry (at May, 1964)

Name	House	Responsibility (a)
The Hon. E. E. Reece ..	Assembly	Premier, Treasurer & Mines
The Hon. R. F. Fagan ..	Assembly	Attorney General
The Hon. W. A. Neilson ..	Assembly	Education
The Hon. D. A. Cashion ..	Assembly	Lands and Works
The Hon. A. C. Atkins ..	Assembly	Agriculture
The Hon. B. K. Miller ..	Legislative Council	Chief Secretary
The Hon. S. V. Ward ..	Assembly	Housing
The Hon. H. J. McLoughlin ..	Assembly	Transport
The Hon. M. G. Everett, Q.C.	Assembly	Health

(a) See section "Administration" later in chapter for fuller statement of responsibility.

Relations of Two Houses

Status of Legislative Council

A vexed question for many years was the exact status of the Legislative Council in relation to the House of Assembly from which the Ministry of the day was predominantly chosen. The 1854 Constitution Act had defined Parliament as "the Governor and the Legislative Council and House of Assembly together" and obviously the approval of all three was necessary for laws to become valid; on the other hand, there was no adequate provision for resolving situations in which the Legislative Council rejected bills or amended bills in ways unacceptable to the House of Assembly. The lower house was elected on a wider franchise, and could legitimately claim to be the more accurate instrument of public opinion to the extent that it was not a perpetual body like the Legislative Council, as its members were all elected at the one time. The power of the Legislative Council to reject and amend was most resented in relation to money bills, since these vitally affected the administration of public affairs by the Ministry of the day.

Money Bills

A period of conflict was followed by the passage of the *Constitutional Amendment Act* 1926 defining the relations of the two houses in the passing of money bills. The following current principles are found in the Act; the Legislative Council retains the right to reject any bill, including a money bill. The Council is specifically prevented from amending bills to raise revenue for the ordinary annual services of the Government and bills imposing land and income tax; it can still suggest to the House of Assembly that amendments be made but the adoption or rejection of such amendments is at the discretion of the Assembly; the operation of such bills is restricted to a period of one year. Apart from the above specific exceptions, the Council retains the right to amend money bills, e.g. those dealing with loan funds or probate. The House of Assembly is given the sole right to initiate bills for the raising of revenue and the imposition of taxes. Finally, the powers of the two houses are declared equal in all matters except for these specific exceptions.

Deadlocks and Dissolutions

It should be observed that there is no provision for a double dissolution as in the Commonwealth Constitution and that the Legislative Council, by rejection of a supply bill, can force the House of Assembly to seek a dissolution without itself needing to face the electorate. This last occurred in 1948.

The Legislative Council has the tradition of being a non-party house and, in actual fact, the majority of its members are elected as independents without the official endorsement of any party. Members who have received party endorsement are in a minority, and the leader of the Government in the Legislative Council cannot rely upon a vote taken on party lines to ensure the passage of any government bill. It is the ability to command a majority in the House of Assembly which gives a party the right to form the government of the day and which ensures the passage of government legislation through the lower house; no such certainty exists in the passage of bills through the upper house and accordingly the Legislative Council is in position to exercise considerable influence on the form in which bills are finally passed through both houses.

Consultation Machinery

When a position is reached in which one house refuses to accept the amendments or legislation of the other, provision exists under the Standing Orders for joint consultation by the calling of a "Free Conference" at which each house is represented by "managers". (It is usual for each house to be represented by four managers.) The free conference endeavours to find a compromise acceptable to both houses.

Another form of consultation between the two houses is the appointment of a joint select committee which is set terms of reference and which is primarily concerned with fact-finding. The passage of a bill may be temporarily delayed while a joint select committee makes a specific investigation; this machinery provides members with the information necessary to cast an informed vote.

(As from July, 1964, the Liberal Party reversed its policy of non-endorsement of candidates for the Legislative Council and decided to endorse candidates in certain circumstances.)

Premiers

The following is a list of the Premiers of Tasmania from 1856 (the year in which the first elected Parliament sat):

Premiers from 1856

Name of Premier	Date of Assumption of Office	Date of Retirement from Office	Duration of Office (Months)
1856-1900			
W. T. N. Champ	1.11.56	26.2.57	4
T. G. Gregson	26.2.57	25.4.57	2
W. P. Weston	25.4.57	12.5.57	1
F. Smith	12.5.57	1.11.60	42
W. P. Weston	1.11.60	2.8.61	9
T. D. Chapman	2.8.61	20.1.63	18
J. Whyte	20.1.63	24.11.66	46
Sir Richard Dry	24.11.66	4.8.69	32
J. M. Wilson	4.8.69	4.11.72	39
F. M. Innes	4.11.72	4.8.73	9
A. Kennerley	4.8.73	20.7.76	36
T. Reibey	20.7.76	9.8.77	13
P. O. Fysh	9.8.77	5.3.78	7
W. R. Giblin	5.3.78	20.12.78	9
W. L. Crowther	20.12.78	30.10.79	10
W. R. Giblin	30.10.79	15.8.84	58
Adye Douglas	15.8.84	8.3.86	19
J. W. Agnew	8.3.86	29.3.87	13
P. O. Fysh	29.3.87	17.8.92	65
H. Dobson	17.8.92	14.4.94	20
Sir Edward Braddon	14.4.94	12.10.99	66

1900-

Sir N. E. Lewis	12.10.99	9.4.03	42
W. B. Propsting	9.4.03	11.7.04	15
J. W. Evans	11.7.04	19.6.09	59
Sir N. E. Lewis	19.6.09	20.10.09	4
J. Earle	20.10.09	27.10.09	—
Sir N. E. Lewis	27.10.09	14.6.12	32
A. E. Solomon	14.6.12	6.4.14	22
J. Earle	6.4.14	15.4.16	24
Sir Walter Lee	15.4.16	12.8.22	76
J. B. Hayes	12.8.22	14.8.23	12
Sir Walter Lee	14.8.23	25.10.23	2
J. A. Lyons	25.10.23	15.6.28	56
J. C. McPhee	15.6.28	15.3.34	69
Sir Walter Lee	15.3.34	22.6.34	3
A. G. Ogilvie (a)	22.6.34	10.6.39	60
E. Dwyer Gray	11.6.39	18.12.39	6
R. Cosgrove	18.12.39	18.12.47	96
E. Brooker	18.12.47	25.2.48	2
R. Cosgrove	25.2.48	26.8.58	126
E. E. Reece	26.8.58	Still in office	

(a) Tasmania has had an unbroken succession of Labor Premiers, starting with the Ogilvie Ministry (1934); earlier Labor Ministries were led by J. Earle (first in 1909) and by J. A. Lyons.

Dissolution of Parliament

The Governor may dissolve the House of Assembly whenever he considers it desirable but he has no power to dissolve the Legislative Council. In effect then, the Legislative Council is a perpetual body except that approximately one-sixth of its seats fall vacant annually. (See "Elections for Legislative Council.")

In practice, the Governor considers dissolving the House of Assembly only when requested to do so by his Ministers. Two recent dissolutions are recorded below:

1950: The Governor, Admiral Sir Hugh Binney, received a request for dissolution from the Premier, the main grounds being the difficulty of passing legislation in a House where the Government was dependent on the support of an independent member for its majority. Having first interviewed the Leader of the Opposition and ascertained that no alternative Government could be formed, the Governor granted the dissolution.

1956: The Governor, Sir Ronald Cross, received a request for dissolution from the Premier, the grounds being that a Minister of the Crown had resigned and joined the opposition, thus depriving the Government of its majority on the floor of the House. In this case, the Governor could have requested the Leader of the Opposition to form a Government since the opposition now had the majority. In granting a dissolution, the Governor thought it "proper in all the circumstances that the electorate should have an opportunity of expressing its will" and maintained that this decision was a legitimate exercise of his discretionary powers. Refusing a dissolution and inviting the formation of an alternative Government would have meant giving power to a party which had received a minority of votes at the previous general election; the alternative was to test the popular will and this was the Governor's choice.

Sessions of Parliament

Parliament is required to sit every year and, having risen, must sit again before twelve months have elapsed. When the House of Assembly is dissolved and a general election held, the Governor is required to call Parliament together within ninety days of the dissolution, subject to a discretionary extension of a further thirty days.

Elections for the House of Assembly

Elections for the House of Assembly are conducted under a system which can be classified as proportional representation by the single transferable vote and which is popularly but incorrectly called "Hare-Clark".

Hare's Proposals

The principle of proportional representation by the single transferable vote was first suggested by Thomas Wright Hill in 1821 and later elaborated by Thomas Hare in his treatise of 1859—*The Election of Representatives, Parliamentary and Municipal*. Hare was primarily concerned with elections to the House of Commons and the essence of his proposal was that each voter was to be allowed to support any candidates, anywhere in Britain, and that his votes could be transferred to other candidates in the order of his preference. A candidate was to be declared elected on attaining the quota found by dividing the total votes

in the country by the number of seats in the House of Commons; the votes cast for a candidate in his own locality were to be counted for him first and those from more distant places only if required to make up a quota.

The Droop Quota

The concept of the quota was developed in a more sophisticated manner by H. R. Droop as follows:

The Droop Quota

Number of Members to be Elected from Constituency	Minimum Votes Necessary to Ensure Election of Any Member (i.e. Quota)
1	$\frac{1}{2}$ of total votes + 1 vote
2	$\frac{1}{3}$ of total votes + 1 vote
3	$\frac{1}{4}$ of total votes + 1 vote
	1
n	$\frac{1}{n+1}$ total votes + 1 vote

Contribution of Clark

In 1896, the Tasmanian Attorney General, A. I. Clark, secured the use of proportional representation for electing the Hobart and Launceston town councils and for choosing Hobart and Launceston representatives for the House of Assembly. (The country seats were still single member constituencies.) To Clark also is attributed the credit for working out the modern method for dealing with surpluses and transfers.

Tasmanian System

The essential features of the system are as follows:

1. For an elector to cast a valid vote, he must express at least three preferences.
2. Names on the voting papers are arranged in distinct groups to facilitate recognition of allegiance to parties.
3. To secure election, candidates must secure a quota in accordance with the Droop formula (i.e. the total first-preference votes in the constituency divided by eight, plus one vote).
4. Should a candidate secure an exact quota on first preferences, his voting papers are set aside as finally dealt with.
5. If the first successful candidate secures a surplus above the quota, then all his voting papers are re-examined to determine which candidates should secure the second preferences.
6. The second preferences are first adjusted by multiplying them by a fraction called the transfer value. The transfer value is calculated by dividing the successful candidate's surplus first-preference votes by his total first preferences. The second-preference votes, adjusted in this way, are now transferred to other candidates.
7. When repetition of the above process results in a position where no further candidates can reach a quota, the candidate who is lowest on the poll is excluded and the preferences shown on his voting papers transferred to the remaining candidates.

The above processes are repeated until seven candidates have been elected. As might be expected, the counting of votes, calculation of transfer values and the transferring of votes are time-consuming and a week may elapse before the declaration of the poll.

Tasmanian Adoption

In 1907, an Electoral Act provided that all members of the House of Assembly were to be elected by proportional representation, the State being divided into five constituencies each of which was to be represented by six members. The first election in accordance with this Act was held in 1909.

The fourth schedule to the 1907 Act dealing with quotas, transfer of votes, exclusion of candidates, etc., is still the blue-print for counting votes today; however, as from the 1959 elections, the number of members for each constituency was increased from six to seven for reasons that will be later specified.

Advantages of System

The major advantage claimed for the system is that the composition of the House of Assembly tends to faithfully reflect the wishes of the electors viewed on a State basis, and that a party with a minority of first preferences is most unlikely to obtain a majority of seats, as sometimes occurs in systems with single-member constituencies. (The election of 1928 is cited as the only example of an Assembly party with a minority of votes securing a majority of seats.) It is also thought that adequate representation is given to minorities and the frequent election of independent members, a feature of Tasmanian parliaments since the depression years, gives some support to this claim.

Leaving aside the matter of independents and minority parties, and assuming that only candidates from the two major parties are elected, then the present pattern is for each constituency to elect four candidates from one of the major parties and three from the other. It follows, therefore, that the opposition is always adequately represented in the House of Assembly and supporters of the opposition party always have representatives for their constituency.

Resolution of Assembly Deadlocks*House of 30 Members*

One of the virtues claimed for the Hare-Clark system is the adequate representation given to minorities. In a small House of 30 members, this virtue tended to be too evident and led to situations where the government of the day did not have the necessary majority to carry all its legislation with confidence.

The first remedy employed was the *Constitution Amendment Act 1954* which provided that, in the event of a 15-all draw between the two major parties in an election, an Electoral Commission would be established. This body's function would be to decide, on the basis of primary votes cast for each party, which were the majority and minority parties. On the meeting of Parliament, the minority party would then have the right to nominate one of its members to the office of Speaker. If the minority party refused to exercise this right, then the majority party might proceed to appoint one of its own members and it would receive an additional member in replacement, elected from the Speaker's constituency.

The election of 1955 created an equal distribution of seats and an Electoral Commission was accordingly appointed to decide the question of which was the majority party. The minority party nominated a member for Speaker and the Assembly elected him to the Chair.

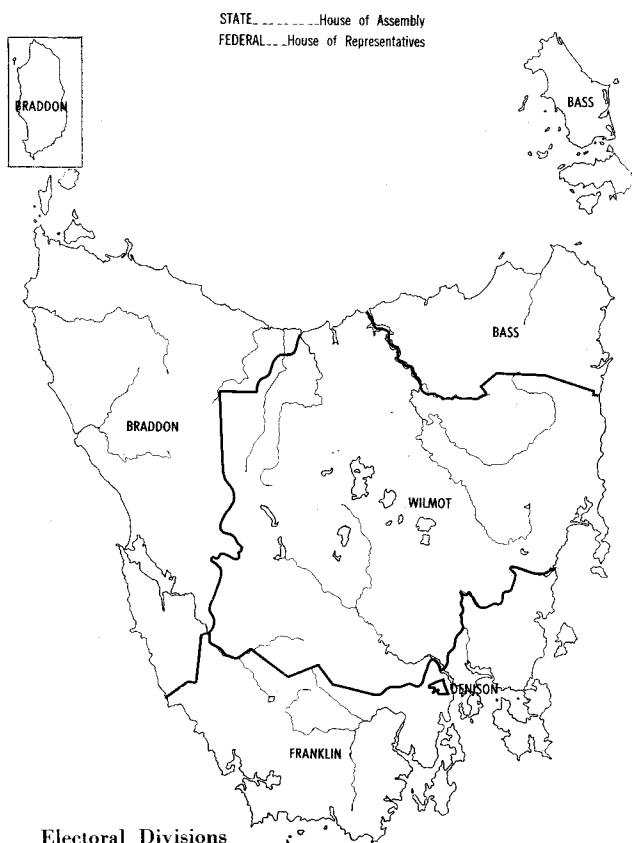
The 1954 Act provided machinery for overcoming deadlocks but still did not have much impact on the major problem—that of providing the government of the day with an effective working majority.

House of 35 Members

In 1958, a further constitutional amendment was made in which the number of members to be elected for each constituency was increased from six to seven, thus enlarging the House of Assembly from 30 to 35 members. At the first elections held under the provisions of this amendment (May, 1959), the major parties secured 17 and 16 seats respectively, the remaining seats being won by independents. At the May elections of 1964, the major parties secured 19 and 16 seats respectively, with independents and minority parties winning no representation.

Life of House of Assembly

After the *Constitution Act 1936*, the House was elected for five-year terms. The 1954 Act provided that the term should be reduced to three years if the special deadlock provisions were invoked to appoint a Speaker, but passage of the 1958 Act restored the status-quo, i.e. five-year terms irrespective of the outcome of the election.

**Constituencies of House of Assembly**

The five constituencies for the House of Assembly are identical with the five electoral divisions electing members to the Federal House of Representatives. The alteration of electoral boundaries to accord with changes in population is carried out under a joint Commonwealth-State agreement in accordance with a simple formula.

The 'normal' number of electors for a division is determined by dividing the State's total electors by five. If the number of electors in any electoral division departs from 'normal' by twenty per cent, then a boundary adjustment is automatically made, again by Commonwealth-State consultation.

The existence of common electoral divisions, both for the House of Assembly and the House of Representatives, allows a joint electoral roll to be maintained and to be used both in State and Federal elections.

Proportional Representation by the Single Transferable Vote

Many regard the system of election for the House of Assembly as being a phenomenon peculiar to Tasmania. This is by no means so, since the following countries either use or have used a similar system of election: Republic of Ireland (both Houses), South Africa (Senate), Malta (both Houses), Gibraltar (Legislative Council), Canada (for some provincial electorates in Alberta and Manitoba) and Australia itself, in the election of the Federal Senate. If the State has any claim to being unique in the field of electoral reform, it must be based on the fact that Tasmania was the first country in the world to introduce proportional representation by the single transferable vote.

Elections for the Legislative Council

Annual Fractional Elections

For the purpose of electing members of the Legislative Council, the State is divided into nineteen single-member constituencies. Each member, when elected, holds office for six years and Council elections are held every year to elect three members; however, in every sixth year counting from 1953, it is necessary to elect four members.

Should the seat of a member become vacant otherwise than by effluxion of time, the person elected to fill the vacancy holds office only till the expiration of the period for which the vacating member was elected.

Preferential Voting

Candidates appear on the voting paper in alphabetical order and are not grouped to show party allegiance as in voting papers for the House of Assembly. If there are two candidates, the voter need only vote for one. If there are three or more candidates, the voter must indicate at least three preferences to record a valid vote.

If any candidate secures first-preference votes exceeding half the total first preferences, he is declared elected. If no candidate satisfies this condition, then the candidate with the fewest votes is excluded and the second preferences shown on his voting papers are transferred to other candidates, the transfer value of each such second preference being equal to one.

If no candidate now has the required majority, the process of exclusion is repeated until such time as one candidate secures the majority.

The method of counting is identical with that used in elections for the Federal House of Representatives and is termed preferential. The full description is election by absolute majority through use of the alternative vote.

Qualifications of Electors and Members

Qualifications of an Elector for the House of Assembly

An elector for the House of Assembly is any person, aged at least twenty-one years, male or female, who has lived in the State six months continuously, who is a natural-born or naturalised subject of the Queen and whose name is on the electoral roll for any Assembly division. Voting has been compulsory since the *Electoral Act* 1928.

Qualifications of Members of House of Assembly

To be eligible for election as a member of the House of Assembly, a candidate must comply with the following conditions:

He must either be an elector or be qualified to be an elector for the House of Assembly, and resident in Tasmania for five years at any one time or resident for two years immediately preceding the election.

Qualification of Electors for the Legislative Council

An elector for the Legislative Council is any person, aged at least twenty one years, male or female, who is a natural-born or naturalised subject of Her Majesty, who has been resident in the State for a period of six months and whose name is on the electoral roll for any Council division.

To obtain enrolment, the elector, in addition to meeting the basic requirements set out above, must establish that he belongs to one of the following categories of persons:

1. The owner of a freehold estate in possession, whether legal or equitable.
2. The occupier of any property, e.g. the tenant of a dwelling-house.
3. The spouse of an owner or occupier as defined in (1) and (2).
4. A graduate of any University in the British Dominions.
5. A legal practitioner on the roll of the Supreme Court.
6. A legally qualified medical practitioner.
7. An officiating minister of religion.
8. An officer or retired officer of Her Majesty's forces.
9. An honourably discharged member of Her Majesty's forces who fulfills certain conditions of service (e.g. in the case of troops raised in Tasmania for World War II, full-time service outside Tasmania is stipulated). Where a discharged member of the forces is a minor but still complies with the requirements of paragraph (9), such member is eligible to be enrolled and to vote.

Voting has been compulsory since the *Electoral Act* 1928.

Qualifications of Members of Legislative Council

A candidate for the Legislative Council must be an elector or have the qualifications of an elector for the Council; in addition to meeting the residential and nationality restrictions imposed on candidates for the House of Assembly, he must be at least twenty-five years of age.

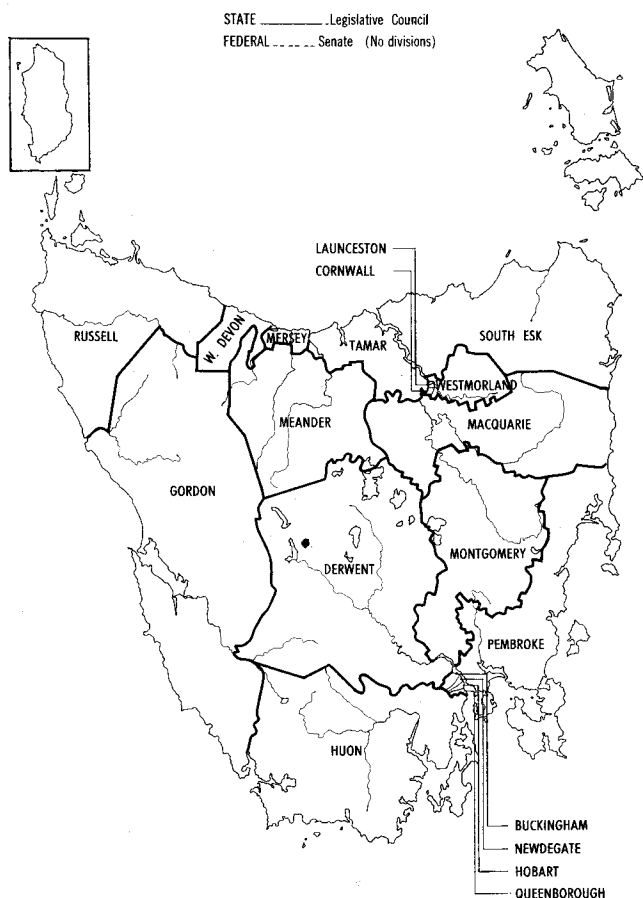
Persons of unsound mind or in prison under any conviction are barred from voting at elections for either House or from being elected to either House. No person shall be capable of being a Member of both Houses at the one time.

By-Elections

House of Assembly

In the case of a vacancy occurring in the House of Assembly, there is provision for the Chief Electoral Officer to publicly invite nominations from candidates who were unsuccessful at the last general election in the constituency which elected the vacating member. If one nomination only is received, then the Chief Electoral Officer declares the consenting candidate elected and notifies the Governor to this effect.

If more than one such nomination is received, the Chief Electoral Officer is required to examine the voting papers counted for the vacating member at the last general election. In the simple case—where the vacating member



Electoral Divisions

obtained a surplus above the quota—this can be confined to voting papers expressing first choices. In the more difficult case—where the vacating member did not obtain a quota on first choices—it is necessary to take into account not only original first-choice papers but also all voting papers representing votes transferred to the vacating member.

The vacating member's voting papers, as defined above, are examined and all his votes are transferred to the consenting candidates according to the preferences expressed thereon. Second preferences derived from first choice votes of the vacating member have a transfer value of one, but from votes he obtained by transfer, only the value at which he obtained them. For the purpose of the count, first-choice votes received by the consenting candidates at the general election are not relevant—the selection is based on preferences as revealed by the voting papers of the vacating member.

When the number of votes in favour of each consenting candidate has been ascertained, the final selection is by the method of the absolute majority through the alternative vote (see "Elections for Legislative Council" for a description of this method).

If no nominations are received from candidates unsuccessful at the last general election, then a writ is issued directing that an election be held to fill the vacancy.

Legislative Council

In the case of a vacancy occurring in the Legislative Council, a writ is issued directing that an election be held to fill the vacancy. There is no provision for a re-count of voting papers of the vacating member as in by-elections for the House of Assembly.

Members of Legislative Council

The following shows members of the Legislative Council and the year in which each will retire:

Electoral District	Name	Year for Retirement
Buckingham ..	Connolly, The Hon. James Bell (a)	1968
Cornwall	Foot, The Hon. Geoffrey James	1972
Derwent	Marriott, The Hon. Donald Keith (a)	1967
Gordon	Dalton, The Hon. Thomas George deLargie (a)	1970
Hobart	Benjamin, The Hon. Phyllis Jean, M.B.E. (a)	1970
Huon	Hodgman, The Hon. William Michael	1972
Launceston ..	Orchard, The Hon. John Raymond	1970
Macquarie ..	Check, The Hon. Thomas Lefroy	1968
Meander	Best, The Hon. Charles Robinson	1971
Mersey	McFie, The Hon. Hector	1972
Monmouth ..	Bisdee, The Hon. Louis Fenn	1969
Newdegate ..	Miller, The Hon. Brian Kirkwall (a)	1969
Pembroke ..	McKay, The Hon. Eric Charles	1971
Queenborough ..	Baker, The Hon. Sir Henry Seymour K.C.M.G., D.S.O.	1971
Russell	Fenton, The Hon. Charles Balfour Marcus	1969
South Esk ..	Carins, The Hon. Lloyd Horton	1968
Tamar	Hitchcock, The Hon. Daniel	1967
West Devon ..	Davis, The Hon. Walter John Torley	1971
Westmorland ..	Gregory, The Hon. Oliver Harold	1967

(a) Endorsed by Australian Labor Party; balance of members independents.

Members of House of Assembly

The following shows members of the House of Assembly elected on 2nd May, 1964 (with their party allegiance shown in brackets):

Name	Electoral Division
Abbott, Nigel Drury, Esquire (Lib.)	Denison
Anderson, William, Esquire (A.L.P.)	Wilmot
Atkins, The Hon. Alexander Charles (A.L.P.)	Bass
Austin, Kenneth Ernest, Esquire (A.L.P.)	Denison
Barker, Wilfred George, Esquire (Lib.)	Braddon
Barnard, Eric Walter, Esquire (A.L.P.)	Franklin
Beattie, Eric William, Esquire (Lib.)	Bass
Bessell, Leonard Hubert, Esquire (Lib.)	Wilmot
Bethune, The Hon. Walter Angus (Lib.) (a)	Wilmot
Brehency, John Gerald, Esquire (Lib.)	Braddon
Bushby, Maxwell Holmes, Esquire (Lib.)	Bass
Cashion, The Hon. Douglas Alfred (A.L.P.)	Wilmot
Chisholm, Geoffrey Donald, Esquire (A.L.P.)	Braddon
Clark, Douglas Frank, Esquire (Lib.)	Franklin
Costello, Edwin Albert, Esquire (A.L.P.)	Braddon
Everett, The Hon. Mervyn George, Q.C. (A.L.P.)	Denison
Fagan, The Hon. Roy Frederick (A.L.P.)	Wilmot
Fraser, Wallace Harcourt, Esquire (A.L.P.)	Bass
Frost, Stewart Charles Hilton, Esquire (A.L.P.)	Franklin
Ingamells, Christopher Robert, Esquire (Lib.)	Wilmot
Le Fevre, Vernon MacKenzie, Esquire (A.L.P.)	Bass
Lyons, Kevin Orchard, Esquire (b)	Braddon
McDonald, Thomas Raymond, Esquire (A.L.P.)	Wilmot
McLoughlin, The Hon. Henry Joseph (A.L.P.)	Denison
Madden, The Hon. John Lewis (A.L.P.)	Bass
Martin, Terence Norman, Esquire (A.L.P.)	Franklin
Mather, Robert, Esquire (Lib.)	Denison
Neilson, The Hon. William Arthur (A.L.P.)	Franklin
Pearsall, Thomas Gordon, Esquire (Lib.) (c)	Franklin
Reece, The Hon. Eric Elliott (A.L.P.)	Braddon
Steer, John Leslie, Esquire (Lib.)	Bass
Strutt, Horace William, Esquire, D.S.O., E.D. (Lib.)	Denison
Townley, Reginald Colin, Esquire (Lib.) (d)	Denison
Ward, The Hon. Sidney Victor (A.L.P.)	Braddon
Young, Aretas William Overton, Esquire (Lib.)	Franklin

(a) Leader of the Opposition.

(b) Resigned from Liberal Party and formed Australian Centre Party, October, 1966.

(c) Resigned and replaced by Iles, Eric Clifton, Esq. (Lib.), on 27th October, 1966.

(d) Resigned 30th June, 1965 and replaced by Brown, George Deas, Esquire (Lib.), on 12th July, 1965.

Parliamentary Elections

Legislative Council

There are no general elections for the Legislative Council, three members retiring each year except in the years 1953, 1959, 1965, etc., when four members retire. At 31st December, 1964, there were 153,911 electors enrolled; of these, 66,748 were qualified as owners of property, 30,285 as occupiers of property and 56,878 qualified on other grounds. In the last six years, votes cast at the annual elections have varied from 71.5 to 91.0 per cent of enrolled electors in individual electorates. At 31st Dec., 1965, there were 155,015 electors enrolled. The electorate with the greatest enrolment was Pembroke (15,912) and with the smallest, Launceston (2,946).

House of Assembly

The last general election for the House of Assembly was held on 2nd May, 1964. The following table shows the voting in general elections held for the House of Assembly since 1931:

Assembly Elections Since 1931

Year of Election	Electors on Roll	Votes Recorded		Informal Votes	
		Number	As Percentage of Enrolled Electors	Number	Percentage of Total Votes
1931	118,730	112,779	95.0	3,885	3.45
1934	127,681	120,622	94.5	3,855	3.19
1937	132,001	124,460	94.3	2,997	2.41
1941	139,234	127,034	91.2	6,344	4.99
1946	157,756	143,674	91.1	14,484	10.08
1948	161,088	148,588	92.2	5,866	3.95
1950	161,650	152,785	94.5	6,841	4.48
1955	173,165	162,637	93.9	6,158	3.79
1956	174,632	166,293	95.2	6,968	4.19
1959	180,344	170,559	94.6	9,816	5.76
1964	193,364	184,571	95.5	7,980	4.32

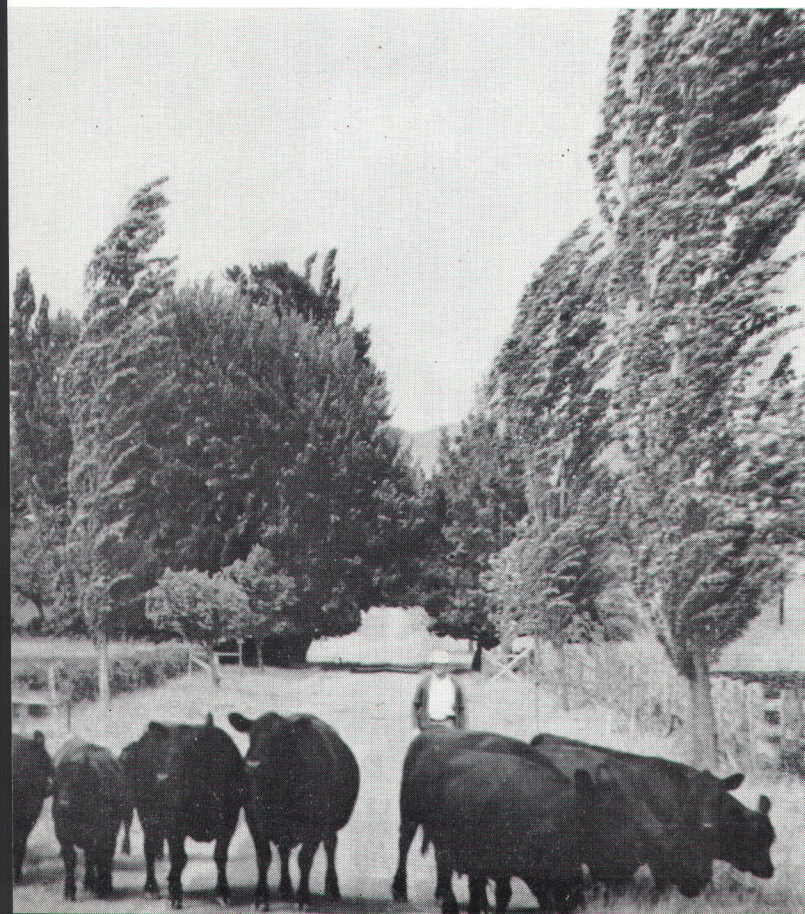
The percentage of informal votes in the above table is not particularly high, even though the voting papers for six or seven-member electorates are necessarily more complicated than those for single-member electorates. In Senate elections held in Tasmania, informal votes are seldom less than 10 per cent of votes cast and, in the 1934 election, exceeded 16 per cent. The Senate voting papers are comparable in complexity with those used for House of Assembly elections and the distinguishing factor seems to be the number of preferences needed for a valid vote. In Assembly elections, only three preferences are compulsory whereas in Senate elections, the voter must indicate as many preferences as there are candidates.

Effectiveness of Hare-Clark System

Since voting for the House of Assembly requires a voter to make at least three choices in order of preference, any complete investigation of the effectiveness of the system requires a study of all preference votes. However, an approximate measure of effectiveness can be obtained by treating the State as a single electorate and finding the total first-preference votes obtained by each party; from these totals it is possible to calculate, by simple proportion, the theoretical share of seats to which each party is entitled. In the table that follows, this measure of effectiveness has been calculated for all House of Assembly elections in the period 1931-1964 inclusive. It will be seen that the relationship between seats actually won and the calculated proportionate share is fairly close in most years for the major parties. In 1955 and 1956, however, the allocation of preferences from non-elected candidates outside the two main parties must be taken into account. Similarly, in 1959 and 1964, the increase in the size of the House brought about by seven-member electorates appears to give the two major parties a slight surplus of seats over and above the calculated proportionate share, the major influence again being the allocation of preferences from candidates outside the two major parties. (At the 1964 elections, the contending parties were Country Party, Democratic Labor Party, Labor Party and Liberal Party, whilst a number of candidates stood as independents.)

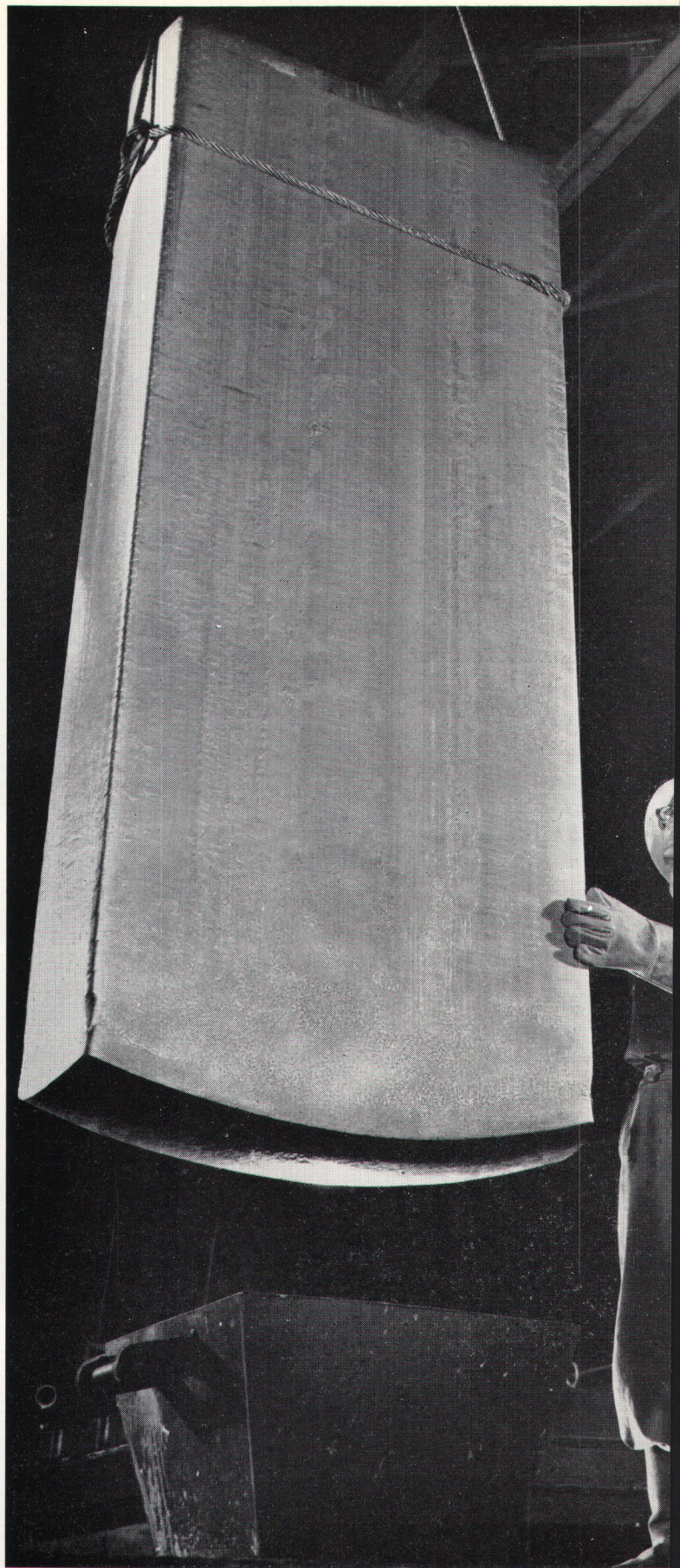


*Panorama of Hobart from Mt. Wellington before removal upstream of floating bridge.
(Dept. of Film Production)*



*Aberdeen
Angus beef
cattle. (Dept.
of Agriculture)*

*A 3,500 lb. ingot
produced at the Bell
Bay plant of Comalco
Aluminium Ltd.
(The Mercury)*



Representation of Parties for the Whole State, 1931-1964
House of Assembly

Election Year	Labor		Liberal or Nationalist (b)		Other (c)	
	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won	Proportionate Share (a)	Seats Won
1931	10.47	10	16.92	19	2.61	1
1934	13.74	14	14.01	13	2.25	3
1937	17.61	18	11.64	12	0.75	..
1941	18.78	20	10.98	10	0.24	..
1946	15.29	16	10.27	12	4.44	2
1948	14.82	15	11.35	12	3.83	3
1950	14.59	15	14.27	14	1.14	1
1955	15.79	15	13.60	15	0.61	..
1956	15.08	15	13.08	15	1.84	..
1959 (d) ..	15.58	17	14.37	16	5.05	2
1964 (d) ..	17.97	19	13.47	16	3.56	..

(a) State treated as single electorate and proportionate share of seats calculated on basis of first preference votes cast for parties.

(b) Liberal as from 1948 election.

(c) Independents and minority parties.

(d) 35 members elected.

Allocation of Preferences—Hare-Clark and Senate Systems Compared

The Senate elections of 1964 called attention to a major difference in the method of distributing preference votes, the Senate and Hare-Clark methods diverging at this point, although both making initial use of the Droop quota.

In the comparison that follows, it is assumed that only one candidate, on the first count, has secured a surplus above the quota (a comparison can be made without using this assumption but it necessarily becomes more complicated).

Second Preferences

Under Hare-Clark, the successful candidate's voting papers are examined to determine which continuing candidates have secured the second preferences. These second preferences are then adjusted by multiplying them by a fraction called the transfer value, i.e. $\frac{(\text{Surplus above Quota})}{(\text{Total First Preferences})}$; the second preferences, adjusted for value in this way, are now credited to the preferred candidates.

Under the Senate system, the successful candidate's voting papers are also examined to determine which candidates have secured the second preferences; the number of second preferences to be credited to preferred candidates will be the same as the number of first preference votes in the successful candidate's surplus. At this point, the successful candidate's total papers are *physically* reduced to accord with this number.

Example

For the purpose of illustration and simplicity, assume that Candidate A with 50,000 first preference votes is the only candidate to exceed the quota of 30,000 on the first count.

Then, under Hare-Clark, these 50,000 papers are divided among the continuing candidates according to the second preferences shown; however, the 50,000 second preferences are attributed to candidates at fractional value $\left(\frac{20,000}{50,000} \text{ or } \frac{2}{5}\right)$.

In effect, the continuing candidates receive, in total, a further 20,000 votes. At this stage, all 50,000 papers are still available for examination of third or subsequent preferences.

Under the Senate system, the 50,000 papers are also divided among the continuing candidates according to second preferences shown; however, only 20,000 of the second preferences are actually to be taken into account, so each candidate's bundle of preferences is *physically* reduced by the ratio 2:5, the papers to be retained being chosen by random selection and the discarded papers being set aside as finally dealt with. At this stage, then, only 20,000 of the papers are available for examination of third or subsequent preferences.

Third Preferences

Physical reduction of the successful Senate candidate's total papers means that a proportion has to be discarded and the question naturally arises, which papers to retain and which papers to discard. The Senate method of physical reduction involves random selection of the papers to be retained. Even at this point, the Hare-Clark and Senate systems have not really diverged since the effect of the distribution of second preferences is the same (Hare-Clark second preferences are subject to a *mathematical* value reduction, the Senate second preferences to a *physical* reduction). Past this point, the divergence between the two systems becomes apparent for, in regard to the Senate method, the following questions arise: Are the third and subsequent preferences on the retained papers an accurate sample of those in the total papers (i.e. retained and discarded combined)? Alternatively, if a second random selection were made, would the third and subsequent preferences in the second selection accord closely with those in the original?

Court actions initiated by Tasmanian and Victorian candidates following the 1964 Senate elections revolved round these questions. A complete re-count in Victoria, involving new random selections, did not alter the result announced after the original count. The Commonwealth Government, in 1965, made available a research grant to the University of Tasmania for an investigation of the Senate voting system.

Salaries of Members of Parliament

Committees of Enquiry

In determining the level of parliamentary salaries in State and Commonwealth legislatures, it has been fairly general practice in the last decade to establish committees of enquiry, the members of which are drawn from outside parliament. The committees of enquiry are required to make recommendations but their findings are treated by the parliaments as being merely a guide, and the legislation fixing new salaries and allowances has not necessarily followed the committees' recommendations in detail.

New Principle

In 1962, the Tasmanian Parliament established a new principle by passing an Act for the setting up of a Parliamentary Salaries Tribunal; this was to be a committee with members drawn from outside the Parliament but its findings,

instead of being recommendations, were to be determinations binding on the Crown. Under Section 7 of the 1962 Act, "a determination is binding upon the Crown" and "where no date is specified in a determination as the date on which the determination is to come into force, the determination comes into force on the date on which it is made". In effect, the Tasmanian Parliament has adopted the principle of wage and salary fixation by independent tribunal and placed its members in the same position as the great majority of workers whose remuneration is fixed by determinations of industrial courts.

The Parliamentary Salaries Tribunal heard evidence after the elections of 2nd May, 1964, and made a determination to come into effect as from 1st October, 1964. The main provisions of the determination are set out below, together with the increases over the previous rates:

Determination of the Parliamentary Salaries Tribunal, 1964

Particulars	Rate Per Annum from 19.4.62 \$	Rate Per Annum from 1.10.64 \$	Increase (a) \$
BASIC SALARY OF MEMBERS			
Member, Legislative Council ..	3700	4600	+ 900
Member, House of Assembly ..	3700	4600	+ 900
SPECIAL RATES (GROSS) (b)			
Cabinet—			
Premier	(c) 8100	(c) 10000	+1900
Deputy-Premier	6500	8200	+1700
"Senior" Ministers	6100	7600	+1500
"Junior" Ministers	5300	7600	+2300
Legislative Council—			
President	5000	6200	+1200
Chairman of Committees	4400	5400	+1000
Government Leader	5900	7000	+1100
Deputy Leader	4350	5250	+ 900
House of Assembly—			
Speaker	5000	6200	+1200
Leader of Opposition	(d) 5900	(e) 7400	+1500
Deputy Leader	4400	5400	+1000
Chairman of Committees	4400	5400	+1000

(a) All amounts below include the increase of \$900 in the basic salary of members.

(b) Both old and new rates include the basic salary received by the office-holder as a member.

(c) Excludes entertainment allowance of \$700.

(d) Excludes travelling allowance of \$400.

(e) Excludes travelling allowance of \$500.

One effect of the determination is to remove the salary distinction between "senior" Ministers and "junior" Ministers; the tribunal found that the distinction rested solely on historical grounds, and, in a practical sense, was no longer valid.

The Tribunal also reviewed electorate allowances and arranged Legislative Council electorates into five groups, members from each group receiving the same allowance. The Tribunal's determination was as follows:

Determination of Electorate Allowances: Parliamentary Salaries Tribunal, 1964

Electorate	Old Rate Per Annum from 19.4.62	Rate Per Annum from 1.10.64	Increase
	\$	\$	\$
Legislative Council—			
(i) Buckingham	570	600	+30
Hobart	550		+50
Newdegate	550		+50
Queenborough	500		+100
(ii) Cornwall	770	750	-20
Launceston	770		-20
Westmorland	770		-20
(iii) Derwent	920	900	-20
Huon	880		+20
Mersey	880		+20
Tamar	1000		-100
West Devon	770		+130
(iv) Gordon	1000	1000	..
Macquarie	1000		..
Monmouth	1050		-50
Pembroke	920		+80
(v) Meander	1150	1100	-50
Russell	1100		..
South Esk	1100		..
House of Assembly—			
Denison	1100	1100	..
Franklin	1450	1450	..
Bass	1500	1500	..
Braddon	1700	1700	..
Wilmot	1750	1850	+100

It should be noted that the previous salaries and allowances (dated from 19.4.62) were as suggested by a Board of Enquiry which made its recommendations in 1960. These recommendations were appropriate to conditions existing in 1960 and not necessarily to those in 1962.

A further determination of the Tribunal in 1964 specified \$7.50 (£3-15-0) per day "when Parliament sits payable to a Member (other than a Minister) who incurs expense in securing overnight accommodation away from his ordinary place of residence".

ACTS OF STATE PARLIAMENT

Summary of Recent Acts

In the list that follows, the notation used is:

- (A 1952)—An Act to amend an Act of the same title passed in 1952.
- (R 1952)—An Act to repeal an Act of the same title passed in 1952.
- (P 1952)—An Act to be incorporated and to be read as one with the Principal Act passed in 1952.
- (RS 1952)—An Act to repeal an Act of the same title passed in 1952 and to substitute new legislation.

The Acts are listed in chronological order; the full short title can be deduced from the summary, e.g. "1963, 4 Supreme Court Civil Procedure (A 1932)" becomes "*Supreme Court Civil Procedure Act, No. 4 of 1963*" and indicates that the *Supreme Court Civil Procedure Act 1932* is the Principal Act. Where possible, a short indication is given of the main subject matter but the phrase "miscellaneous provisions" is used where condensation is not practicable.

State Acts, 1963

Number	Short Title and Summary
1	Crown Lands (A 1935)—exchange of land for roads.
2	Lands Resumption (A 1957)—land for highways.
3	Real Property (A 1886)—surrender or compulsory acquisition of land.
4	Supreme Court Civil Procedure (A 1932)—miscellaneous provisions.
5	Foreign Judgments (Reciprocal Agreement)—miscellaneous provisions.
6	Civil Aviation (Carriers' Liability)—intra-State air services.
7	Damage by Aircraft—fixation of liability.
8	Inflammable Liquids (A 1929)—prohibitions, evidence, regulations.
9	Education (A 1932)—report of Bursaries Board.
10	Tasmanian University (A 1951)—vesting and control of land.
11	State Advances (A 1935)—advances to farmers.
12	Long Service Leave (A 1956)—definition of continuous employment.
13	Fisheries (A 1959)—miscellaneous provisions.
14	Strahan Marine Board Loan (P Marine Act 1921)—borrowing powers.
15	Electoral (A 1907)—miscellaneous provisions.
16	Registration of Births and Deaths (A 1895)—legitimations.
17	Vaucluse Hospital—vesting in the Crown the hospital site.
18	Town and Country Planning (A 1944 and Local Government Act 1962)— deputy commissioner.
19	Hydro-Electric Commission (Mersey-Forth Power Development) (P Hydro- Electric Commission Act 1944)—authority for new power scheme.
20	King Island Scheelite Agreement—agreement for subsidy.
21	Public Service Tribunal (A 1958)—miscellaneous provisions.
22	Meercroft Home (Application of Moneys)—application of trust fund.
23	Police Regulation (A 1898)—Disciplinary Board.
24	Conveyancing and Law of Property (A 1962)—corrections.
25	Supply 1963-1964—Consolidated Revenue.
26	Constitution (A 1934)—electoral qualifications, disqualification of members.
27	Licensing (A 1932)—miscellaneous provisions.
28	Dangerous Drugs (A 1959 and Police Offences Act 1935)—powers of inspectors.
29	Cremation (A 1934)—fees.
30	Printers and Newspapers (A 1911)—definition of newspaper.
31	Probation of Offenders (A 1934)—conditional release, probation orders, failure to observe conditions.
32	Police Offences (A 1935 and 1962)—miscellaneous provisions.
33	Justices (A 1959)—powers and procedure.
34	Launceston Flood Protection (A 1960)—transfer of completed works.
35	Miners' Pensions (A 1956)—Treasury contribution.
36	Traffic (A 1925)—unauthorised use of motor vehicles.
37	Judges' Salaries (A 1920)—increased salaries.
38	Criminal Code (A 1924)—miscellaneous provisions.
39	Rural Fires (A 1950)—notification of occurrence of fires.
40	Tuberculosis—examination of persons suffering or suspected to be suffering.
41	Explosives (A 1916)—storage, regulations.
42	Agent-General (A 1911)—increased salary and allowances.
43	North Esk Regional Water (A 1960)—increase in financial authority.
44	West Tamar Water (A 1960)—increase of capital, water mains in building estates.
45	Lending of Money (A 1915)—contracts.
46	Appropriation 1963-64—Consolidated Revenue.
47	Land Tax (P 1910)—rates 1963-64.
48	Supplementary Appropriation 1962-63—Consolidated Revenue.
49	Marketing of Primary Products (A 1945)—establishment and control of boards.

State Acts, 1963—continued

Number	Short Title and Summary
50	Long Service Leave (No. 2) (A 1956)—definition, entitlement, how taken.
51	Entertainments Tax (A 1953)—suspension of operation of Act.
52	Loan Fund Appropriation 1963-64—authorisation.
53	Dairy Products Marketing (A 1957)—application of quota.
54	Waterworks Clauses (A 1952)—miscellaneous provisions.
55	State Savings Bank Transfer Agreement—agreement with Commonwealth Savings Bank.
56	Child Welfare (A 1960)—child offences, neglected children, wards of State.
57	Public Officers Protection (A 1934)—penalty for resistance and obstruction.
58	Pharmacy (A 1908)—exemption for sale of certain drugs, etc.
59	Tasmanian Auxiliary Nursing Service (A 1949)—qualifications for registration.
60	Nurses' Registration (A 1952)—qualifications for registration.
61	Audit (A 1918)—salary of Auditor-General.
62	Public Service (A 1923)—salary of Commissioner.
63	Mental Health (RS Mental Hospitals Act 1858 and Mental Deficiency Act 1920)—consolidating legislation.
64	Ambulance (A 1959)—miscellaneous provisions.
65	Public Service Superannuation Fund (A 1905)—annuities.
66	State Teachers Superannuation Fund (A 1904)—annuities.
67	Stock (A 1932)—powers of inspectors, diseases in stock.
68	King Island Scheelite Agreement (No. 2)—subsidy agreement.
69	Conveyancing and Law of Property (No. 2) (A 1962)—subdivision of land.
70	Milk (A 1947)—powers and duties of Board.
71	Lawrence Vale Landslip (A 1961)—entitlement in respect of acquisition of land.
72	Crown Lands (Miscellaneous Provisions) (P Crown Lands Act 1935)—sales and grants to specified bodies and persons.
73	Traffic (No. 2) (A 1925)—vehicle registrations.
74	Launceston War Memorial Community Centre Association (Mothercraft Home Funds)—use of trustee funds.
75	Wages Boards (A 1920)—remuneration of Boards, expenses of witnesses.
76	State Meat Board Loan Guarantee—Treasury guarantee.
77	Miners' Pensions (No. 2) (A 1956)—variation of rates and conditions.
78	Self's Point Land (A 1951)—disposal of land.
79	Crown Lands No. 2 (A 1935)—building leases and miscellaneous provisions.
80	Local Government (A 1962)—miscellaneous provisions.
81	Hobart Corporation (RS 1947, 1952, 1958, 1959, 1960, 1961)—consolidation and amendment of previous legislation.
82	Launceston Corporation (RS 1941, 1959, 1960)—consolidation and amendment of previous legislation.
83	Co-operative Housing Societies—formation, registration, management, Treasury guarantees.
84	Education (No. 2) (A 1932)—miscellaneous provisions and technical education.
85	Real Property (No. 2) (A 1862, 1863, 1893, 1962)—miscellaneous and certificates of title.
86	Defacement of Property (A 1898)—change in exemptions.
87	Superannuation (A 1938)—miscellaneous provisions.
88	Police Regulation (No. 2) (A 1898)—police pensions.
89	Royal Tasmanian Society for Blind and Deaf (RS 1933 and 1949)—constitution.
90	Wheat Industry Stabilisation (RS 1958)—miscellaneous provisions.
91	Medical (A 1959)—foreign degrees.
92	Dentists (A 1919)—scope of dental mechanics' operations.
93	Traffic (No. 3) (A 1925)—drivers' licences, closure of streets, driving under influence.
94	Workers' Compensation (A 1927)—miscellaneous provisions.
95	Launceston Corporation (Scotch and Roman Catholics Cemeteries Improvement) (A 1947)—use of cemeteries laid out as parks.
96	Constitution (No. 2) (A 1934)—Council divisions.
97	Marine (A 1921)—navigation, marine survey, manning of vessels, fishing vessels, launches, certificates of competency.

State Acts, 1964

Number	Short Title and Summary
1	Supply 1964-65—Consolidated Revenue.
2	Reprint of Statutes (A 1954)—Attorney General's certificate.
3	Noxious Weeds (RS 1938)—new machinery for eradication and control.
4	Queen Victoria Maternity Hospital (A 1952)—procedure and powers of Board.
5	Tasmanian Trotting Association (A 1961)—chairman and executive.
6	Trustee (A 1898)—exemption from rules.
7	Factories, Shops, and Offices (A 1958)—extension of expiry date.
8	Government House Land—reservation for Governor's residence.
9	Deceased Persons' Estates Duties (A 1931)—gifts for charitable objects.
10	Poisons (A 1916)—exempted preparations, and preparations prohibited for animals.
11	Marine (A 1921)—election of Launceston Marine Board.
12	Land Valuation (A 1950)—valuers' qualifications, valuations, notice of subdivision.
13	State Employees (Long-Service Leave) (A 1950)—eligibility.
14	Southern Regional Water (A 1960 and Metropolitan Water Act 1961)—financial provisions and water supply affecting Sorell Municipality.
15	Launceston Corporation (A 1963)—elections, special accounts, "private streets".
16	Artificial Breeding (A Stock Act 1932)—establishment of Artificial Breeding Board.
17	Hydro-Electric Commission (Mersey-Forth Power Development) (A 1963)—financial provision and amendment to include Rowallan Power Scheme.
18	Agent-General (A 1911)—salary and allowances.
19	Audit (A 1918)—salary of Auditor-General.
20	Public Service (A 1923)—Commissioner's salary.
21	Weights and Measures (A 1934)—sale of bread.
22	Hydro-Electric Commission (A 1944)—cessation of State subsidies for rural extensions.
23	Mining (A 1929)—licences, royalties, leases.
24	Stamp Duties (A 1931)—duty on policies of insurance.
25	Loan Fund Appropriation 1964-65.
26	Appropriation 1964-65—Consolidated Revenue.
27	Land Tax (P 1910)—rates for 1964-65.
28	Governor's Salary (A 1951)—variation.
29	Supplementary Appropriation 1963-64—Consolidated Revenue.
30	Fire Brigades (A 1945)—Commission, Boards, miscellaneous provisions.
31	Survey Co-ordination (A 1944)—powers of Nomenclature Board.
32	Wills (Formal Validity) (P Wills Act 1840)—rules affecting wills.
33	Transport (A 1938)—financial reports to Minister.
34	Hospitals (A 1918)—vacation of Board membership.
35	Traffic (A 1925)—stamp duties and insurance charges.
36	Wages Boards (A 1920)—penalties, compulsory conferences.
37	Radioactive Substances (A 1954)—miscellaneous provisions.
38	Stone and Berry Fruits Board (A 1939)—growers' contributions.
39	Scenery Preservation (A 1915)—powers of officers, notable buildings, regulations.
40	Land Surveyors (A 1909)—scales of fees.
41	Oil Pollution (A 1961)—prosecutions.
42	Parliamentary Retiring Allowances (A 1955)—members' contributions.
43	Parliamentary Privilege (A 1898)—permanent officers of the Parliament.
44	Railway Management (A 1935)—promotions appeals, actions by passengers.
45	Launceston Marine Board Loan (A 1951)—variation of borrowing power.
46	Australian Titan Products (A 1945)—discharge of effluent into Bass Strait.
47	Apprentices (A 1942)—attendance at classes.
48	Motor Vehicles Tax (A 1917)—exemption of tractors and farmers' machinery.
49	Education (A 1932)—miscellaneous provisions.
50	Plumbers' Registration (A 1951)—miscellaneous provisions.
51	Tourist Accommodation Loans (A 1945)—financial provisions.
52	Racing and Gaming (A 1952)—variation in bookmakers' commission.
53	Weights and Measures (No. 2) (A 1934)—miscellaneous provisions.
54	Traffic (No. 2) (A 1925)—regulations affecting registration, closure of city streets.

State Acts, 1964—continued

Number	Short Title and Summary
55	Sale of Blood—prohibition of unauthorised trading.
56	State Teachers Superannuation Fund (A 1904)—variation in annuities.
57	Superannuation (A 1938)—variation in scale of units.
58	Public Service Superannuation Fund (A 1905)—variation in annuities.
59	Anatomy (RS 1869)—provisions for anatomical examination and teaching.
60	Public Account (A 1962)—repeal of expiry section.
61	Long Service Leave (A 1956)—exemptions, entitlement.
62	Local Government (A 1962)—miscellaneous provisions.
63	Marine (A 1921 and 1963)—unseaworthy vessels, certificates, inspections.
64	Associations Incorporation Act—miscellaneous provisions.
65	Workers Compensation (A 1927)—employers' liability.
66	Public Works Committee (A 1914)—functions, remuneration, travelling expenses.
67	Conveyancing and Law of Property (A 1884)—easements.
68	Water (A 1957)—Commissional water rights, irrigation, dams.
69	Migrant Teachers (Financial Assistance)—payments to stimulate recruitment overseas.
70	Renison Limited (Zeehan Lands)—vesting of certain lands in Renison Limited.
71	Shops (A 1925)—extension of expiry date, petrol filling stations.
72	Real Property (A 1886)—miscellaneous provisions.
73	Hydro-Electric Commission (Miena Dam) (A 1944)—heightening Miena Dam.
74	Crown Lands (Miscellaneous Provisions) (P Crown Lands Act 1935)—dealings of Crown with named individuals and bodies.
75	Public Account (No. 2) (P 1957)—Treasurer's reserve, trust fund.

State Acts, 1965

Number	Short Title and Summary
1	Supply 1965-66—Consolidated Revenue.
2	State Employees (Long Service Leave) (A 1950)—miscellaneous provisions.
3	Long Service Leave (A 1956)—payment in lieu and how and when taken.
4	Inflammable Liquids (A 1929)—interpretation and licensing of premises.
5	Tasmanian Auxiliary Nursing Service (A 1949)—qualifications for registration.
6	Registration of Deeds (A 1935)—fees.
7	Trustee (A 1898)—authorised investments.
8	Metropolitan Water (A 1961)—miscellaneous provisions.
9	Evidence (A 1910)—power to send for witnesses and documents; admissibility; judicial proceedings.
10	Hospitals (A 1918)—hospital boards.
11	Racing and Gaming (A 1952)—totalisator licences.
12	Community Centre Loans (A 1959)—borrowing powers of municipalities and application of borrowed moneys.
13	Abandoned Lands—reversion and reversion of these lands.
14	Factories, Shops and Offices (R 1958)—consolidation.
15	Stamp Duties (A 1931)—duty on H.P. agreements and offences.
16	Workers' (Occupational Diseases) Relief Fund (A 1954)—miscellaneous provisions.
17	Emu Bay Railway (Private)—relief of obligation to keep railway open.
18	Petroleum Products Subsidy—subsidisation of distribution in country areas.
19	Justices (A 1959)—clerks of petty sessions; summary trial; fees; rules of committal and procedure.
20	Local Government (A 1962)—miscellaneous provisions.
21	Launceston Corporation (A 1963)—miscellaneous provisions.
22	Milk (A 1947)—Milk Board elections.
23	Sunday Observance (A 1908)—exemption of some shops, works of mercy or charity.
24	Racing and Gaming (No. 2) (A 1952)—stamp duty on betting tickets.
25	Housing Agreement (A 1961)—powers of Treasurer in carrying out agreement.
26	Judges' Salaries (A 1920)—increased salaries.

State Acts, 1965—continued

Number	Short Title and Summary
27	Traffic (A 1925)—miscellaneous provisions.
28	Appropriation 1965-66—Consolidated Revenue.
29	Loan Fund Appropriation 1965-66—authorisation.
30	Land Tax (P 1910)—rates 1965-66.
31	Supplementary Appropriation 1964-65—Consolidated Revenue.
32	School Dental Nursing Service—establishment.
33	Criminal Code (A 1924)—aircraft crimes.
34	Legal Practitioners (A 1959)—articles and admission qualifications.
35	Local Courts (A 1896)—miscellaneous provisions.
36	Supreme Court Civil Procedure (A 1932)—costs and transfer of actions.
37	Conveyancing and Law of Property (A 1884)—miscellaneous provisions.
38	Highways (A 1951)—power to dispose of surplus land.
39	Sewers and Drains (A 1954)—interpretation, offences and regulations.
40	Superannuation (A 1938)—contributions and pensions.
41	Fisheries (A 1959)—regulations and prohibitions.
42	Licensing (Fees) (A 1932)—fees paid for licences and incidental provisions.
43	Public Service (A 1923)—miscellaneous provisions.
44	Supreme Court (A 1959)—functions of registrar.
45	Fire Brigades (A 1945)—regulations.
46	Crown Lands (Miscellaneous Provisions) (A 1935)—vesting and disposal of lands.
47	Archives (RS 1943)—consolidation.
48	Dairy Produce (A 1932)—miscellaneous provisions.
49	Emmerton Bequest—accommodation of aged persons at Smithton.
50	Stamp Duties (No. 2) (A 1931)—duty on life policies, or transfer of securities, and other.
51	Limitation of Actions (A 1836 and 1875)—limitation of time for claims in personal injuries.
52	Fatal Accidents (A 1934)—action to be commenced within a year.
53	Police Offences (A 1935)—resistance and obstruction of public officers.
54	Public Officers Protection (Repeal) (R 1934, 1963).
55	Decimal Currency—transition provisions.
56	Iron Ore (Savage River) Agreement—establishment of industry.
57	Crown Lands (A 1935)—surrenders to the Crown.
58	Stamp Duties (No. 3) (A 1931)—special provisions.
59	Plumbers' Registration (A 1951)—registration provisions.
60	State Advances (A 1935)—miscellaneous provisions.
61	Married Women's Property (A 1935)—equity of husband and wife.
62	Police Offences (No. 2) (A 1935)—miscellaneous provisions.
63	West Coast Pioneers' Memorial Museum (P Tasmanian Museum Act 1950)—establishing of museum.
64	Local Government (No. 2) (A 1962)—miscellaneous provisions.
65	Railway Management (A 1935)—responsibility outside railway limits.
66	Pharmacy (A 1908)—miscellaneous provisions.
67	Industrial Development (A 1954)—departmental provisions.
68	Deceased Persons' Estates Duties (A 1931)—relation to gift duty.
69	Land Valuation (A 1950)—new valuations and basis of taxes.

ADMINISTRATION

State Departments and Authorities

The system of responsible government requires that the executive power of the State shall be exercised by the Cabinet; in exercising this power, the Ministers of the Cabinet are held responsible for the actions and administration of government departments and other governmental bodies which have been created for three basic purposes: (i) to put into practice the laws made by Parliament; (ii) to give effect to decisions of the Ministry; and, (iii) to advise the Ministry on matters of policy.

A distinction is sometimes drawn between government departments and semi-governmental authorities, the chief criteria being: (i) whether the staff is recruited under the *Public Service Act*; (ii) the degree of Ministerial control;

(iii) whether the authority functions as a business enterprise; (iv) whether the authority has been established as a statutory corporation; (v) the degree to which the authority is dependent on the Treasury for funds. Applying these criteria to the Tasmanian situation, it is easy to immediately identify examples of "pure" departments and "pure" semi-governmental authorities but there are a number of doubtful cases where the authority does not completely fit into either category. In this chapter, therefore, no attempt will be made to classify the principal government authorities as departments or otherwise but, in descriptions that follow, mention will be made of these criteria where relevant. Departments and authorities are arranged to show the Minister accepting responsibility following the elections held on 2nd May, 1964; the allocation of responsibility, however, is subject to change and the Cabinet has the power to vary it at any time.

It should also be noted that a Cabinet Minister may be called upon to serve in more than one capacity, the present arrangement of portfolios being:

(i) Premier, Treasurer, and Minister for Mines, (ii) Deputy Premier and Attorney General, (iii) Education, (iv) Lands and Works, (v) Agriculture, Tourists and Immigration, (vi) Chief Secretary, (vii) Housing and Forests, (viii) Transport and Police, (ix) Health.

Premier, Treasurer and Minister for Mines

Premier's and Chief Secretary's Department

The functions of this department are combined under the control of one permanent head—the Under Secretary. The activities of the department are difficult to classify, covering as they do a very wide range, but the principal matters of concern are: constitutional matters; cabinet secretariat; inter-departmental co-ordination of Government activities; Executive Council; tables of precedence; honours; Premiers' conferences; civil defence; royal commissions; Government ceremony and hospitality; overseas publicity; maintenance of Government house and staffing; security of public buildings; messenger service; ministerial transport; matters related to interstate shipping; film censorship; cinema registration; fire brigades; public cemeteries; bank holidays; museum and botanical gardens; miners' pensions; coal-mining long-service leave.

In addition, the department serves as ministerial office for other departments administered by the Premier and the Chief Secretary and as a channel of communication with the Commonwealth Relations Office (through the Governor), with the Prime Minister of the Commonwealth, with Premiers of other Australian States and with the Tasmanian Agent-General in London.

Industrial Development Branch

This authority is primarily concerned with the attraction of industries to the State and with assistance in the establishment of industries, in some cases by loans or by making suitable sites available.

The Hydro-Electric Commission

The Commission is responsible for the generation and distribution of electric power throughout the island; it is also continuously engaged in construction work aimed at increasing the capacity of the system. The work of the Commission is extensively described in Chapter 8, "Secondary Industry—Manufacturing".

Treasury Department

The Treasury, as the central financial authority of the State, is responsible for maintaining the control of Parliament over the public expenditure and for promoting financial order throughout the Public Service.

In the accounting sphere, it acts as the accounting centre for Government departments and authorities, paying accounts due by the Government, or providing funds for departments for this purpose, and receiving either direct from the public or from departments, all monies due to the Government. It finally records all financial transactions although detailed accounts are kept by each department. It also advises on the accounting procedures to be adopted by departments and controls the Government's bank accounts.

It is responsible for advising the Government on financial matters generally and, in particular, on matters relating to Commonwealth/State financial relations, including the operations of the Commonwealth Grants Commission, and the Australian Loan Council. Through the State Finance Committee, which consists of Treasury Officers, it also prepares the case for presentation to the Commonwealth Grants Commission for a special grant in accordance with Section 96 of the Commonwealth Constitution.

Other important functions of the Treasury are to prepare or examine legislation affecting the finances or financial procedures of the Government; to advise the Government on the sources of funds required to enable its financial policy to be carried out; to prepare financial estimates, budgets and statements for the information of the Government and Parliament and to carry out economic and financial investigations; to control the borrowings of all local and semi-governmental authorities throughout the State.

Through its various branches, the Treasury collects all State taxes; controls the State Superannuation Fund; values all properties throughout the State for taxation and local authority rating purposes and values specific properties for other Government purposes.

Supply and Tender Department

This department is a purchasing organisation obtaining supplies, equipment and medical requirements for Government departments and organisations associated in some way or other with Government expenditure.

Government Printing Office

The main function of the department is to ensure adequate supplies of stationery, books, etc. to the various Government departments and authorities; to print and publish Parliamentary Papers, Bills, Acts, &c. and to supply technical publications, stationery and forms to branches of Commonwealth departments throughout Australia. In some respects, the department is analogous in function to a printing and publishing business in the private sector of the economy since its revenue is largely derived from charges for the work it does.

Department of Mines

The functions of the department are summarised under its four constituent sections: (i) Geological Survey—main activities include regional mapping, examination of mines, investigation of underground water supplies, testing of foundations and the preparation of geological maps and technical publications. (ii) Mines and Explosives—main activities are inspectorial with regard to the *Mines and Works Act* (safety and health of mining, quarrying and metallurgical workers), the *Explosives Act* (importation, storage and transport of explosives)

and the *Inflammable Liquids Act*. The section's mining engineers also operate diamond drilling and boring plants. (iii) Chemical and Metallurgical—main activities are analyses of mineral samples, water and other inorganic materials, research into maximising recovery from metallic and non-metallic minerals and investigation of possibilities of commercial exploitation through new treatment processes. (iv) Administration—main activities are administration of legislation dealing with the holding of land for mining and the granting of financial assistance to the mining industry.

Attorney General

Attorney General's Department

In other political systems, the Attorney General is sometimes known as the Minister for Justice. The department has a variety of functions which include: the administration of the courts; the appointment of Justices of the Peace and Coroners; rehabilitation of ex-prisoners and operation of a probation system; forming and reviewing proposals for legislation; action as required under various legislation, e.g. the *Local Courts Act*, the *Rules Publication Act*, the *Maintenance Act* and the *Jury Act*. In so far as the Attorney General is responsible for a number of other departments, this department exercises oversight in a general sense, particularly where policy is concerned.

Solicitor General's Department

The Solicitor General advises the Governor, Ministers and Government departments and authorities on all legal matters affecting them. He initiates criminal prosecutions in the Supreme Court and various other summary prosecutions in Courts of Petty Sessions; in civil litigation, the department's counsel represent the Crown. Other work of the department is concerned with giving legal advice, preparing legal documents and transferring land.

Supreme Court and Sheriff's Department

The department is under the control of the Master and Registrar of the Supreme Court and acts as the registry for all processes in the Supreme Court, whether civil, criminal or matrimonial and for appeals to the Full Court or the Court of Criminal Appeal. The Registrar is also District Registrar of the High Court of Australia. The function of the Sheriff is to enforce judgments.

The Registrar is also the authority for the registration of companies, bills of sale, firms and co-operative societies, applications for probate or letters of administration, friendly societies, trade unions and savings banks.

Court of Requests and Magistracy Department

This department is responsible for the administration of three separate courts of jurisdiction, namely: (i) Courts of Petty Sessions dealing with criminal offences, simple offences, breaches of duty and applications for certain types of licence; (ii) Courts of Requests dealing with civil proceedings when the amount involved does not exceed \$500; (iii) the Licensing Court which issues licences for the retail and wholesale distribution of liquor.

Lands Titles and Registry of Deeds Department

Under the *Real Property Acts* and the *Registration of Deeds Act*, this department is responsible for registering and recording all kinds of dealings in land, including all privately-owned land in the State.

Parliamentary Draftsman's Department

The department concerns itself with the drafting of bills for submission to Parliament and the drafting of regulations under the authority of existing statutes.

Public Trust Office

Under the *Public Trust Office Act*, the Public Trustee is empowered to administer the estates of deceased persons, whether testate or intestate and to replace on request executors named in wills. The Public Trustee may also act under power of attorney and as custodian trustee or be appointed by Court order to manage the affairs of specific persons. All payments under the *Workers Compensation Act* are made through the Public Trust Office. In some respects, the Public Trust Office is analogous in function to a private solicitor's office.

Registrar General's Department

The main function of the department is the central registration of births and deaths originally registered in 52 districts approximating to the 49 local government areas. (Council clerks usually serve as local Registrars.) The department authorises and registers all celebrants of marriages and also acts as a central registry for marriages; a further function is the administration of the *Legitimation Act* and the recording of all adoptions.

Prisons Department

This department is charged with the administration of penal institutions, the principal being the Risdon Gaol and the gaol farm at Hayes.

Minister for Education*Education Department*

This department is responsible for the administration and staffing of the State system of primary, secondary and technical education. This and other functions of the department are dealt with extensively in the chapter on "Social Conditions".

Minister for Lands and Works*Department of Public Works*

The department is responsible for carrying out a large works programme which includes the construction and maintenance of an extensive highway system, the planning, design and construction of schools, hospitals and public buildings generally and other public works required by the Government.

Department of Lands and Surveys

This department is responsible for all Crown Lands which may be reduced by alienation; augmented by acquisition; leased or let under licence. The department's mapping section is responsible for production of State maps, the main source of data now being aerial photos. A sub-section maintains all mineral charts and prepares survey instructions for mineral surveys.

Rivers and Water Supply Commission

This authority is responsible for bulk water schemes (North Esk, Southern Regional, West Tamar) which make supplies available to the distributing municipalities. It also acts as a channel for Government assistance for municipal water and sewerage schemes. The authority licenses the taking of water from rivers and lakes, is responsible for anti-pollution regulations and carries out river improvement work to reduce flooding and erosion.

Department of Film Production

This department produces films and material used for tourist promotion, teaching, public relations and newsreels.

Minister for Agriculture, Tourists and Immigration*Department of Agriculture*

The functions of this department are: (i) to provide advisory services to farmers and dairymen; (ii) to conduct research into plant diseases, pest control and stock diseases; (iii) to carry out inspections and testing in a number of fields related to primary production. A section, the Sea Fisheries Division, is concerned with regulating the State's sea fisheries by licensing and inspection.

Agricultural Bank of Tasmania

The Agricultural Bank is not a bank if the criterion is acceptance of deposits from the public (as with savings and trading banks); its main functions are: (i) to make loans to home builders wanting to erect their own homes; (ii) to acquire, develop and improve land for farms suitable for war service land settlement and closer settlement. The main sources of its finance are State loan funds and funds for special purposes made available by the Commonwealth Government. Basically, the authority resembles a mortgage bank.

As a housing authority, the Bank lends to home-builders, administers Commonwealth funds advanced to building societies and arranges Government guarantees to building societies; as a development authority, the Bank administers war service and closer settlement schemes, and lends money for such things as fisheries expansion, establishment of sawmills, milk processing plants, and abattoirs; finally the Bank administers any relief legislation enacted by Parliament to assist, with loans or grants, farmers who have suffered serious losses through abnormal circumstances or seasonal conditions, (e.g. floods).

Tourist Office

The function of this office is to publicise the tourist attractions of the State and to arrange bookings for tourists. Offices are maintained in other Australian States. Loans are also made to increase tourist facilities.

Chief Secretary*Audit Department*

The functions of the Audit Department are to ensure that expenditure is limited to the objects for which Parliament has appropriated funds, that statutory law affecting public finance has been observed, that public revenues have been collected and that departmental and other public accounting is accurate. The Auditor General is directly responsible to Parliament for audits of accounts of Government departments and authorities, city and municipal councils, marine boards, the Tasmanian University and a host of smaller accounts. He reports annually to both Houses of Parliament on the position of the accounts.

Public Service Commissioner's Department

Under the *Public Service Act*, the Commissioner is required to recruit and appoint staff, to arrange training and to be responsible for disciplinary supervision of all officers of the Public Service. The department is concerned with the efficiency of the Public Service as a whole and with the principles of management and staff economy in individual departments.

Electoral Department

This department is responsible for the enrolment of qualified electors for the Legislative Council and maintaining the rolls for the 19 Council divisions; it collaborates with the Commonwealth Electoral Department in the preparation of the rolls used for House of Assembly, Senate and House of Representatives elections. In addition to administering elections for the House of Assembly and the Legislative Council, the department conducts other elections, e.g. for members of wages boards and hospital boards and representatives of employees on the Public Service Tribunal.

Department of Labour and Industry

This department is responsible for the implementation and supervision of industrial legislation and for helping employers and employees solve problems of industrial relations, i.e. by arbitration and conciliation where workers under State awards are involved. The activities of the department are more extensively described in the chapter "Labour, Prices and Wages".

Public Service Tribunal Department

The tribunal has the power to make principal awards determining the scales of salaries and working conditions of all employees in the Public Service, Hydro-Electric Commission, teaching service, police force, public hospitals, statutory authorities, and other State instrumentalities defined by the *Public Service Tribunal Act*.

Social Welfare Department

This department has two main concerns: (i) child welfare—the department investigates complaints that children are neglected or inadequately controlled; administers a scheme whereby children declared wards of the State are placed in the care of private persons or institutions; operates a juvenile probation system in relation to children's courts; maintains a number of institutions for children committed to its care; operates a housekeeper service for homes where the mother is temporarily absent; (ii) aid to persons in indigent circumstances—the main social services burden falls on the Commonwealth in the payment of pensions but the State, through this department, makes grants or supplementary allowances to mothers left with dependent children and without adequate income. Eligible aged and invalid pensioners are supplied with fuel allowance, and are assisted with ambulance and other transport expenses.

Tasmanian Grain Elevators Board

This authority operates bulk storages at Hobart, Launceston and Devonport to maintain adequate supplies of wheat for local needs.

The State Library

This authority is concerned with making books, films and gramophone records available to people throughout the State. The State Library is situated in Hobart but it assists municipalities operate their own libraries by providing them with books and technical assistance; a mobile library service is maintained in the municipalities around Hobart. An important function is the keeping of the State Archives.

Minister for Housing and Forests*Housing Department*

The functions of this department include the purchase of land, its development for housing purposes and the erection of houses, flats and estate shopping

centres. The assets so created are then either sold to the public (principally by purchase contract involving repayment of equated instalments) or let at rental.

Forestry Department

The Forestry Department, administered by the Forestry Commission, has exclusive control and management of all State forests and timber reserves, and, with the concurrence of the Secretary for Lands, of all forest products on other Crown land. Its functions include the granting of forest permits and licences for the sale of timber, the granting of leases for the occupation of State forests, the collection of revenue, and the development and protection of native forests and of plantations of exotic softwoods.

Major activities at present being undertaken are the preparation of inventories of the State's timber resources and of estimates of future yields of sawlogs and pulpwood; the construction of major access roads for logging and of minor roads for protection; research into practical methods of regenerating eucalypt forests; the establishment, pruning and thinning of softwood plantations, and the preparation of forest-type maps based on aerial photo-interpretation.

Minister for Transport and Police

The Transport Department

This authority operates as a business organisation administering State railway, road and ferry services; it is also the licensing and registration authority for motor drivers and motor vehicles. In addition, it is concerned with road safety and the promulgation of traffic rules. The functions of the authority are more extensively described in the chapter on "Trade, Transport and Communications".

Metropolitan Transport Trust

The function of this authority is the running of bus and trolley-bus services in Hobart, Launceston and Burnie.

Police Department

This department is responsible for the administration of the State police force which is more extensively described in the chapter "Social Conditions".

Minister for Health

Department of Health Services

The maintenance of the health of the community and the prevention of disease is the responsibility of this department. The main sections are: (i) Public Health—responsible for work associated with sanitation and hygiene, through State health inspectors and by supervision of the work of municipal health inspectors. Other phases of activity are the Child Health Service, School Medical and Dental Services, and the Sabin vaccine and triple-antigen campaigns. (ii) Mental Health—responsible for the control of mental hospitals, mental deficiency institutions, and clinical work in regional centres. (iii) Tuberculosis—concerned with prevention, detection, notification and treatment of tuberculosis; administration of chest hospitals, clinics and the mass miniature X-ray campaign. (iv) General—concerned with the administration of all State hospitals, the District Medical Service and health education; liaison with other States and the Commonwealth in health matters.

Chapter 4

LOCAL GOVERNMENT

GENERAL DESCRIPTION

Historical

The development of local government in Tasmania falls into three distinct phases:

Hobart and Launceston

Hobart Town was granted elected Commissioners in 1846; under an Act of 1852, both Hobart and Launceston were given elected Municipal Councils. In 1857 the City of Hobart was incorporated, followed by the Town of Launceston a year later; Launceston was proclaimed a city in 1888.

Rest of State before 1906

Prior to the passing of the *Local Government Act* 1906, there was a great variety of elected Boards, Trusts, &c., in Tasmania, each in control of a district for certain specified objects, but they were all abolished by that Act. The various Boards were as follows:

Road Districts: Under the *Roads Act* 1840, the control of the main Hobart-Launceston road was retained by the Government while that of other roads was placed under the management of District Commissioners elected by the inhabitants of the District. In 1847, these latter roads were placed under the control of the Court of Quarter Sessions, but in the following years several roads were exempted by special Acts and handed over to Trustees elected by householders. Under the *Cross and Bye Roads Act* 1851, the Governor could proclaim Road Districts under the control of Trustees elected by the landowners and householders of the District. In 1865 provision was made that where any roads were under the control of a Rural Municipality, such Municipality was deemed to be a Road District. Under the *Main Roads Act* 1880, certain scheduled roads were withdrawn from the control of Road Districts and handed over to the Government, other main roads being grouped into Main Road Districts under Boards; but where such main roads were within a Rural Municipality or Road District, these latter became the Main Road Districts. The cost of the main roads was defrayed by the Government. In 1907, the last year in which the Road Trusts operated, there were 105 in existence.

Rural Municipalities: Under the *Rural Municipalities Act* 1858, any Town or Electoral, Police or Road District could be proclaimed a Rural Municipality with a Council elected by the rate payers. In 1865, the whole of Tasmania (excluding Hobart, Launceston and Tasman Peninsula, then a gaol) was divided into 30 Municipal Districts; of these, 18 had already been constituted under the Act of 1858, and others could be proclaimed on petition. The Act of 1858 can be seen as an early attempt to obtain uniformity of local government organisation throughout the State but this purpose was not achieved, as the following figures show: accumulated number of Rural Municipalities

constituted in year in brackets—1 (1860); 5 (1861); 10 (1862); 14 (1863); 17 (1864); 18 (1865); 19 (1866). It is sufficient to record that in 1907, the last year of operation of Rural Municipalities, there were still only 19 in existence.

Town Boards: Under the *Town Boards Act* 1884, the Governor could constitute a Town, provided that it was not situated within the boundaries of a Rural Municipality. Trustees elected by the ratepayers exercised the provisions of the *Police Act* with regard to the health and improvement of Towns, and in 1885 every Town was declared to be a Road District. In 1907, the last year of operation of Town Boards, there were 23 in existence.

Fruit Boards: These could be constituted under the *Codlin Moth Act* 1887 by the Governor, with a Board elected by fruitgrowers; finance came from an acreage tax upon orchards.

Rabbit Trusts: The *Rabbit Destruction Act* 1871 authorised the Governor to proclaim Rabbit Districts, with Boards elected by landowners. These Trusts were abolished in 1882, and again constituted in 1887. In 1889 every Municipal District was declared to be a Rabbit District.

Boards of Health: Under the *Health Act* 1885, a Central Board of Health was constituted, and the Councils of Rural Municipalities and Town Boards became Local Boards of Health. Other Local Boards could be proclaimed where no Rural Municipality or Town Board existed.

Boards of Works: These were appointed by the Governor as Advisory Boards regarding the expenditure of the moneys set apart for the construction of roads and bridges under the *Waste Lands Act* 1863. In 1870 these moneys were handed over to the Trustees of Road Districts.

Recreation Ground Trusts: Under the *Public Recreation Grounds Act* 1888, such grounds were placed in the hands of Trustees elected by electors for the House of Assembly residing in a proclaimed Recreation Ground District.

School Boards: These were appointed by the Governor.

Rest of State after 1906

At present, local government functions throughout the State, the relevant bodies being the Hobart, Launceston and Glenorchy City Corporations and 46 municipalities. The genesis of this framework is found in the *Local Government Act* 1906 under which a commission was appointed to divide the State into not more than 60 districts and to subdivide each district into not less than three nor more than five wards, each ward including as nearly as practicable an equal ratable area. The Commissioners were empowered to adjust the boundaries of adjoining municipalities, provided that in so dividing the State any Town might be deemed to be included or excluded from such boundaries. The cities (at that time, Hobart and Launceston) were not to be included, and were exempt from the provisions of the Act.

The Commissioners, in terms of the Act, divided the State into 49 districts but the later absorption of the Municipalities of Queenborough and New Town into the City of Hobart reduced the number to 47; the granting of city status to Glenorchy in 1964 resulted in the present total of 46.

Prior to the passing of the Act in 1906, the State had been split up into districts of different kinds, each controlled for a specific purpose by a Board,

Trust or Council. The effect of the Act was to abolish all the separate districts as well as the Rural Municipalities and Town Boards and to set up new authorities, uniformly constituted and exercising similar functions.

Since the Act of 1906, there has come into effect a large body of legislation affecting local government and there has been some widening of function. Accordingly a new consolidating Act, the *Local Government Act* 1962, was passed and is now in operation.

City of Hobart

Description

The City of Hobart ($42^{\circ} 54'S$; $147^{\circ} 21'E$) is the seat of the State Government and capital of the State of Tasmania. It is located on the Derwent estuary some twelve miles from the open sea and possesses a deep sea port of the first rank (the U.S. aircraft carrier "Saratoga" and the "Ile de France" berthed at Hobart without tug assistance during World War II; tonnages were 33,000 and 43,000 respectively); the tidal rise and fall is four feet at most and the port authority has only acquired tugs recently, previously maintaining that the largest ships could berth without assistance. After Sydney, Hobart ranks as Australia's oldest capital city, the two foundation dates being 1788 and 1804.

The population of the City of Hobart is 54,000 but it is ringed by municipalities which are largely suburban in character; for statistical purposes, the City of Hobart is grouped with these suburban areas outside the control of the Hobart Corporation to form "Metropolitan Hobart" with a population approaching 130,000. The possibility of any further growth of population in the City of Hobart itself will depend, in large degree, upon the adoption of a policy of high-density housing development, since most of the post-war growth of population has been recorded in the fringe municipalities.

Hobart City occupies 19,728 acres and is built on the plains and foothills below Mount Wellington (4,166 feet); it is bounded along its eastern edge by the River Derwent. The city is unique among Australian capitals in possessing upper slopes of a mountain as an enormous park, the reservation of large areas of Mt. Wellington originating from its use as the source of the first water supply; although additional water is now obtained from sources outside the city boundaries, the use of water from the mountain still continues. The pinnacle of Mount Wellington lies on the city boundary and can be reached by a road built in 1937, the distance from the General Post Office being eight miles. The other distinctive park land is the Queen's Domain of 476 acres, comprising hills and plains alongside the Derwent. Hobart can claim a number of attractions, none of them unique singly but, taken collectively, giving a peculiar and special character to the city; among such attractions can be listed beaches, a mountain for a park, deep-sea and fishermen's ports, early colonial architecture and a broad river spanned by a four-lane bridge linking shores 3,364 feet apart.

Hobart City Council

Under the *Hobart Town Corporation Act* 1857, the City of Hobart Town was incorporated under the style of the "Mayor, Aldermen and Citizens of the City of Hobart Town".

The present council consists of 12 aldermen, including the Lord Mayor and Deputy; elections are held every second year when six aldermen retire. The terms of the Lord Mayor and Deputy Lord Mayor are also for two years and they are elected by ratepayers, not by their fellow aldermen. Candidates

for office as alderman do not stand for wards, as in most municipal elections, and all ratepayers can vote for the filling of the six vacancies. Elections were held in July, 1962, 1964, 1966, &c.

Historical Development

Hobart Town is first mentioned in the *Police Act* 1838 by which the Surveyor General was required to set out the limits of the town and to make footpaths. When the Diocese of Tasmania was created in 1842, Hobart Town was proclaimed a city.

The development of representative institutions in Tasmania came earlier in local government than in the wider sphere where successive Lieutenant Governors still ruled with the help of nominated Executive and Legislative Councils. Under the *Hobart Town Commissioner Act* 1846, the town was divided into five wards, each represented by three elected commissioners who held office for two years. The prime functions of the new body concerned lighting, paving and draining. Commissioners, to be elected, had to own land worth \$1,000 or to be rated at an annual value of \$100 and ministers of religion were declared ineligible. The maximum assessment was not to exceed five cents in the dollar of the annual value.

In 1852, the Hobart Town Council Act created a Municipal Council consisting of seven members elected for two-year terms with power to elect a Mayor from among themselves. Powers were widened to include waterworks, markets, public works and public transport (under the *Cab Act*).

In the United Kingdom, the maintenance of police forces developed as a responsibility of local government and the same evolution can be seen in Tasmania in the nineteenth century. Under a *Police Act* 1857, the Hobart Town Council was vested with the control of its own police force which was to be financed from fines and a special rate.

In the same year, the City of Hobart Town was incorporated and the council increased to nine members, the term of office being three years with three members retiring each year. The council was now empowered to borrow money on the mortgage of rates but, until the mortgage was paid off, it had to continue the maximum amount of rate in operation at the time the mortgage was made.

In 1858, the present Government House was erected on the Domain. The Hobart Town Council was able to acquire the gardens of the old residence when it was demolished and to commission the building of the Town Hall which was completed in 1866. The portico of the Town Hall is said to cover the site where Lieutenant-Governor Collins' tent stood in 1804; the old Government House was located between the Town Hall and Franklin Square.

In 1881, the title "Hobart" came into official use in lieu of the previous "Hobart Town". Reference was made earlier to the Council controlling its own police force; in 1899 this function ceased when all police were placed under central administration by the State.

Further development of the responsibilities of the Council came from the absorption of outlying towns, details being: 1907, Glebe Town, Mt. Stuart and Wellington; 1914, Queenborough; 1920, New Town. By 1920 the number of aldermen had increased to thirteen to give representation to the new areas but in 1934 this was reduced to twelve, the present level.

Throughout this period, it had been customary for aldermen to elect the Mayor from their own ranks, but in 1929 a change was made so that the rate-payers voted to fill the office; two years later, similar elections were introduced for the office of Deputy Mayor. In 1934, by Royal Command, the status of Mayor was raised to that of Lord Mayor.

Local Government—Present Organisation

Authority and Functions

The authority for and the forms of local government are prescribed entirely by State legislation and such legislation has largely been consolidated in the *Local Government Act 1962*.

The functions of the municipalities are set out in broad general terms in Section 176 of the *Local Government Act* as:

“A Municipality—

(a) may for the welfare and good government of its district and the inhabitants thereof—

- (i) make by-laws;
- (ii) undertake, make and maintain works, buildings and services; and
- (iii) order and dispose the common affairs of its members; and

(b) shall cause the Queen's peace to be kept and maintained within its districts.”

Particular authority is given by Section 180 for a Council Clerk to be a Deputy Clerk of the Peace, Registrar of the Court of General Sessions and Clerk of Petty Sessions in his municipality.

Administration of Justice

This responsibility of the municipality to administer the lower courts of justice is confined to Tasmania and it would appear to be a carryover from the very early days of local government when the municipality was required to provide the police force as well. In all other States, the administration is in the hands of a State Department. The practice here would now appear to be continued by reasons of expediency. (It should be noted that the process of removing this function from the municipalities has already commenced in that the lower courts in the Cities of Hobart and Glenorchy and the Municipalities of Clarence and Kingborough are administered by the State. It should also be noted that where municipalities administer the courts, they receive all fines into their revenue, and in some instances the Council Clerks receive additional salary for this court work.) In addition, by certain Acts, the municipalities are given specific responsibilities, e.g. *Health Act*, *Local Courts Act*, *Education Act*.

Electors

The electors are natural born or naturalised British subjects who either—

- (a) own land within the municipality;
- (b) occupy land within the municipality;
- (c) being neither owner nor occupier, are spouses of such owners or occupiers, and are enrolled as voters for an Assembly division;
- (d) being neither owner nor occupier, are discharged servicemen.

Generally speaking, but with unexpectedly complicated modifications where land is shared, etc., owner-electors and occupier-electors have each from one to four votes depending upon the annual value of the land. Each spouse-elect and ex-service elector has one vote.

A municipality may be divided into three, four or five wards or be undivided. If the former, the electors elect representatives for their own ward; if the latter, the election is for the whole council.

Councillors

A Councillor must be an elector of and either reside in, or carry on business in, the municipality and he is subject to disqualification for certain breaches of conduct. He is elected for three years and one-third of the council retires each year. Councils may comprise 6, 9, 12 or 15 Councillors. Councils annually elect their Warden, Deputy Warden and Treasurer. (The electors of the City of Hobart elect the Lord Mayor.) The office of Warden is comparable with that of the Mayor of a town or the President of a shire in other States.

Cities, Municipalities and Towns

In Tasmania there are two categories only—a municipality or a city. The Act provides for the establishment of towns and indicates requirements before such towns are proclaimed, but these are not municipal administrative units. It would seem that the only reason for the proclamation of an area as a town is to bring into action certain provisions relating to rating and to building requirements. Before a municipality can petition for a town to become a city, the town must have had, for five years before the petition, a population of not less than 20,000.

Other than this population requirement for a city, there are no provisions such as exist in some of the other States and in Canada for enlarging or diminishing the status of municipalities to accord with increasing or decreasing population.

Sources of Revenue

There are four main sources of revenue, namely rates, Government grants, business undertakings and services. The rates are levied at so much in the dollar on the assessed annual value without any fixed maximum. The amount of rates paid is, generally speaking, unequal to the cost of supplying the services which have, in the last thirty years, increased considerably in both range and expense. The Government grants are a recognised means of increasing the revenue of municipalities.

The municipalities are unable to collect any rates for land owned by the Crown but where services are provided, the Crown does pay for such services, since these are benefits which the municipality is not obliged to make available at no cost. Grants and subsidies are made, generally speaking, to assist the municipalities to meet the overall costs of municipal government and sometimes the grant is made to assist in a particular project. Grants are sometimes made to induce the councils to undertake the provision of certain services or to develop those services. Grants may also be made in order to assist in paying the costs of particular services which are shared by two or more adjoining municipalities. Earnings from business undertakings include charges for the supply of water and for the use of abattoirs. Some of these businesses show a small profit but, in most cases, the fees demanded are usually only just sufficient to cover the cost of providing the services.

Municipal Commission

Provision was also made in the *Local Government Act* 1962 for the appointment of a Commission, to be called the Municipal Commission, to hold office for a period of five years. The prime function of the Commission was to inquire into and report to the Governor not later than December, 1965—

- (i) whether any existing municipality had insufficient financial resources for the proper performance of its functions and, if so, what re-arrangements were best for strengthening or disposing of it;
- (ii) whether any town had boundaries substantially different from those of the actual town and, if so, what ought the boundaries to be;
- (iii) on the division of the State into counties and how that division might best be brought into conformity with the Act or subparagraph (iii*a*) and, if so, what special powers it should have in what municipalities and whether any of those municipalities should be reduced in status;
- (iii*a*) on the division of the State into municipalities and whether any and, if so, what changes should be made by the enlargement and contraction of municipal boundaries and the creation and abolition of municipalities, by reason of changes in population, industry (primary and secondary), means of communication and transport, and urban development, and
- (iv) whether the establishment of the county council was a reasonable alternative to a recommendation under subparagraph (i).

On completion of its report, the Commission is required from time to time as directed by the Governor to inquire into and report on any question of municipal and town boundaries and of the abolition, creation, amalgamation, or severance of municipalities, or any other question directed by the Act to be referred to it.

REPORT OF MUNICIPAL COMMISSION

Main Recommendations

On 22nd October, 1965, the Municipal Commission issued, in the one publication, seven reports containing, as its principal recommendations, proposals for a reduction in the number of local government authorities from 49 to 20. Since the recommendations involve the partition of some existing areas, this terminology is used in the following summary table:—

- (U) the urban portion of a local government area adjacent to Hobart or Launceston;
- (C) the non-urban portion of a local government area adjacent to Hobart or Launceston;
- (P) a fraction of any local government area other than those adjacent to Hobart and Launceston.

Changes Recommended by Municipal Commission

Local Government Bodies Recommended	Description of Constituent Parts (In Terms of Present Cities and Municipalities)
Greater Hobart (City) ..	Hobart; Glenorchy (U); Clarence (U); Kingborough (U)
Municipality—"A" ..	Kingborough (C); Esperance; Huon; Port Cygnet; Bruny.
"B" ..	Clarence (C); Spring Bay (P); Richmond; Sorell; Oatlands (P).
"C" ..	New Norfolk; Hamilton; Glenorchy (C).
Greater Launceston (City) ..	Launceston; Beaconsfield (U); Westbury (U); St. Leonards (U); Lilydale (U); Evandale (U).
Municipality—"D" ..	Beaconsfield (C); Lilydale (C); George Town.
"E" ..	Westbury (C); Deloraine.
"F" ..	Evandale (C); St. Leonards (C); Longford.
King Island ..	King Island (No change).
Flinders ..	Flinders (No change).
Circular Head ..	Circular Head (P).
Burnie ..	Burnie (No change).
"G" ..	Circular Head (P); Wynyard; Waratah; Zeehan (P).
"H" ..	Kentish (P); Ulverstone (P); Penguin.
"I" ..	Kentish (P); Ulverstone (P); Devonport; Latrobe.
"J" ..	Scottsdale, Ringarooma; Portland (P).
"K" ..	Portland (P); Fingal; Glamorgan.
"L" ..	Queenstown, Gormanston, Strahan, Zeehan (P).
"M" ..	Bothwell (P); Campbell Town; Ross (P).
"N" ..	Green Ponds; Bothwell (P); Brighton; Spring Bay (P); Ross (P); Oatlands (P).

Effect of Recommendations

As indicated in the previous table, formation of the 20 recommended new administrative authorities involves the partition of some existing municipalities and cities; the number so affected is 17. In some cases, e.g. Spring Bay, Oatlands and Ross, the areas to be excised are extremely small and merely correspond with properties which are illogically partitioned by existing boundaries. In the case of Portland, the recommended change will have the effect of bringing under one authority a township at present partitioned between two authorities by a river boundary (Scamander River). The greatest changes, from the aspect of area, are proposed in relation to Bothwell (severance of the Great Lake Ward), Circular Head (severance of area east from the Detention River) and Kentish (severance of Wilmot ward).

The other major change affects Hobart and Launceston where it is envisaged that the urban areas of "fringe" municipalities should be joined with the inner cities to form a Greater Hobart and a Greater Launceston.

The following table gives details of the recommended partitions:

Partitions Recommended by Municipal Commission

Present Local Government Authority	Partition of Existing Areas	For Incorporation As Part Of:
Glenorchy ..	(i) Urban development along Derwent (ii) Balance of City of Glenorchy	Greater Hobart Municipality "C"
Clarence ..	(i) Urban development, from Risdon Vale to Tranmere inclusive (ii) Balance of Municipality	Greater Hobart Municipality "B"

Partitions Recommended by Municipal Commission—continued

Present Local Government Authority	Partition of Existing Areas	For Incorporation As Part Of:—
Kingborough ..	(i) Urban development known as Tarooma, Kingston and Blackmans Bay (ii) Balance of Municipality	Greater Hobart Municipality "A"
Spring Bay ..	(i) Small area on Little Swanport River on Oatlands municipal boundary (ii) Balance of Municipality	Municipality "N" Municipality "B"
Oatlands	(i) Small area near Woodsdale on Spring Bay municipal boundary (ii) Balance of Municipality	Municipality "B" Municipality "N"
Beaconsfield ..	(i) Urban development known as Riverside and Riverside North (ii) Balance of Municipality	Greater Launceston Municipality "D"
Westbury ..	(i) Urban development known as Prospect Vale (ii) Balance of Municipality	Greater Launceston Municipality "E"
St. Leonards ..	(i) Urban development known as Kings Meadows, Youngtown, Prospect, Waverley, Ravenswood and the town of St. Leonards (ii) Balance of Municipality	Greater Launceston Municipality "F"
Lilydale	(i) Urban development known as Newnham, Alanvale, Mayfield and Rocherlea (ii) Balance of Municipality	Greater Launceston Municipality "D"
Evandale	(i) Small triangle, southern end of Franklin Village (ii) Balance of Municipality	Greater Launceston Municipality "F"
Circular Head ..	(i) Large area west of Wynyard boundary back to Detention River (ii) Balance of Municipality	Municipality "G" Circular Head
Zeehan	(i) Town of Corinna (ii) Balance of Municipality	Municipality "G" Municipality "L"
Kentish	(i) Wilmot Ward (ii) Balance of Municipality	Municipality "H" Municipality "I"
Ulverstone ..	(i) Small portion of Town of Forth (ii) Balance of Municipality	Municipality "I" Municipality "H"
Portland	(i) Scamander area north of Scamander River (ii) Balance of Municipality	Municipality "K" Municipality "J"
Bothwell ..	(i) Large area being the whole Great Lake Ward (ii) Balance of Municipality	Municipality "M" Municipality "N"
Ross	(i) Small area on Lake Crescent on Oatlands municipal boundary (ii) Balance of Municipality	Municipality "N" Municipality "M"

Further Recommendations

The Commission also recommended in its reports that:

- (i) the proclamation of 117 localities as towns be rescinded, the boundaries of 52 other towns be amended and those of four other towns be confirmed as at present;
- (ii) Tasmania be divided into five counties made up as follows:
 - County (1)*—City of Greater Hobart, Municipalities "A", "B" and "N";
 - County (2)*—City of Greater Launceston, Municipalities "D", "E" and "F";
 - County (3)*—Municipalities of King Island, Circular Head, Burnie, "G", "H" and "I";
 - County (4)*—Municipalities of Flinders, "J", "K" and "M".
 - County (5)*—Municipalities of "C" and "L";
- (iii) the question of appropriate names for the newly proposed municipalities (referred to as "A", "B", "C", etc., above) and for the proposed counties be referred to the Nomenclature Board.

PLANNING AUTHORITIES

Southern Metropolitan Master Planning Authority

Introduction

In discussion of the functions of this authority, a difficulty of terminology arises. For statistical purposes, metropolitan Hobart consists of Hobart and Suburbs as defined in the chapter "Demography". For the purposes of the planning authority, metropolitan Hobart extends far beyond Hobart and Suburbs since the basic aim of this planning body is to make provision for future growth. The area for which the Authority is planning is best defined broadly as a triangle based on Pontville (Brighton Municipality), Snug (Kingborough Municipality) and Seven Mile Beach (Clarence Municipality). Such a triangle includes the Cities of Hobart and Glenorchy and also those parts of Brighton, Kingborough and Clarence Municipalities which are likely, in the future, to experience urban expansion because of their proximity to Hobart and Suburbs.

For the purposes of this section, the triangular area just defined will be referred to as the "S.M. area".

Establishment of Authority

For purposes of local government administration, the urban area centred on Hobart is at present divided between four authorities—the municipalities and cities of Clarence, Kingborough, Hobart and Glenorchy; on the northern fringe of the area lies the Municipality of Brighton sharing the Derwent River as a boundary with Glenorchy. In 1954, a "Hobart Metropolitan Planning Committee" adopted resolutions to the effect that a planning authority should be set up, that a "Master Plan" should be prepared and that the plan should provide for an eventual population of 250,000 persons in the "S.M. area". (The Census population of Hobart and Suburbs in that year was 95,206 persons.) The five participating municipalities and cities previously named indicated that they were prepared to support the establishment of such an authority by striking a special townplanning rate of up to $\frac{1}{2}$ d. in the pound (0.208 cents in \$).

The necessary legislation was passed in 1957, staff was recruited and the first meeting of the Southern Metropolitan Master Planning Authority and its officers was held on 3rd November, 1958.

Representation and Finance

The *Local Government Act* 1962 prescribes that each city shall have the right to appoint three representatives and each municipality two; though aldermen or councillors are not specifically prescribed, this type of representation is preferred. The Authority is also empowered to make contracts, accept trusts of properties for townplanning purposes and make by-laws for domestic purposes. By demand under its common seal, the Authority obtains from each constituent member council a contribution based on the annual value of all ratable property. The demand, however, is not to exceed $\frac{1}{2}$ d. in the pound (0.208 cents in \$), unless the Authority has the consent of all its constituent municipalities and cities.

Functions of the Authority

The main function of the Authority is the technical and legal preparation of a master plan for the prescribed area (the detailed planning nevertheless remaining the responsibility of each constituent municipality or city). The *Local Government Act* 1962 (Section 744-2) defines the purpose of a master plan as follows:—

“A master plan shall be made with regard for the present and probable future requirements of the area and may provide for—

- (a) communications;
- (b) areas the use of which is to be restricted in respect of purpose, or which are to remain unbuilt on;
- (c) public buildings, facilities and amenities; and
- (d) areas and sites for things and processes that would constitute nuisances if done among houses or offices”.

A master plan therefore involves the zoning of land and restricting its use for specific purposes such as housing, retail trade, factories or parks and reserves; it is also concerned with the problem of the highways and outlets that will become essential in the future.

A factor influencing the preparation of a master plan is the present and future execution of major works by instrumentalities other than those which constitute the Authority, examples being the Public Works Department, the Housing Department, the Health Department, the Transport Department and the Metropolitan Water Board. In working on a master plan, the Authority has to obtain and enlarge the co-operation between these various organisations by serving as a medium of mutual contact.

The preparation of a master plan requires extensive surveys and studies, the results of which are sometimes of general interest quite apart from their prime relevance to the master plan. Two examples will suffice: (i) a population forecast for the “S.M. area”; (ii) mapmaking. Before the Authority’s formation in 1958, there were no fully detailed maps available of any part of the “S.M. area”. As the availability of maps for townplanning is very important, their production was started immediately. Practically the whole area now is covered with precise, up-to-date and contoured maps on a scale of 1,000 feet to the inch. A similar set is also in preparation on a scale of 400 feet to the inch. Although designed primarily for townplanning, the maps are sold for a variety of other purposes.

Legal Procedure With Master Plan

After preparation of the draft master plan, the Town and Country Planning Commissioner gives provisional approval, thus allowing it to be put on statutory exhibition for three months while objections are recorded; objections may be lodged not only by ratepayers but also by the member-councils of the Authority. Having heard the objections, the Town and Country Planning Commissioner may order modifications and then approve the amended plan; final approval rests with the Minister for Local Government.

When finally approved and sealed, the plan comes into effect on a specified date and, from then onwards, all detailed planning within the prescribed area must conform to this master plan. It should be noted that all modifications to the master plan have to be treated as if they were a new plan, again requiring public exhibition and the recording of objections.

The Master Plan

The Master Plan 1962 was put up for statutory exhibition and objections were considered; the most powerful objection held that the provisions of the system of communications were not sufficiently specific, a point not disputed by the Authority which maintained that the transportation study essential to proper planning was beyond the financial resources of local government.

In 1963, the Authority withdrew its Master Plan 1962 and the State Government decided to carry most of the cost of a full transportation study, the results of which would become available in 1965. The Authority issued a "Townplanning Policies Map 1964" which, although not having the legal standing of a Master Plan, was of value to member councils in their detailed planning and to other authorities concerned with development in the "S.M. area". The formulation of an amended Master Plan will become possible when the data from the transportation study are evaluated.

Pattern of Growth in "S.M. Area"

The "S.M. area" is, in effect, a valley hemmed in between rows of steep sloping mountains and hills and with the wide River Derwent in the bed of the valley. This topographical limitation set the stage for the ribbon development adopted by the first settlers in 1804 and by their successors. The flat banks along the foreshore of the Derwent saw the first development which spread north through New Town, Moonah, Glenorchy and Claremont. Late last century, a ferry started a Derwent service and from its landing jetties in Bellerive and Lindisfarne, housing began to spread along the eastern foreshore. This growth was accelerated by the bridging of the lower Derwent (with a floating bridge in 1943 and with a pier-based structure in 1964).

Residential development to the south of Hobart was almost halted after Sandy Bay had been built, the steep seaward slopes of Mt. Nelson barring easy communications. After 1945, however, the increased use of cars altered this position and southern areas such as Taroona and Kingston Beach began to grow.

By comparison with the pre-war population in the Hobart area, some of these developments were quite large. The Clarence Municipality on the eastern shore advanced its population from 5,000 in 1944 to 12,500 in 1954 and 28,000 in 1964. The Municipality of Glenorchy, north of Hobart, grew from 12,500 in 1944 to 26,000 in 1954 and 38,000 in 1964. South of Hobart the Kingborough Municipality had a lesser rate of growth due to its more difficult links with the city. During the period 1944-1964, its population has grown from 5,000 to 10,000, most of the increase occurring in the suburban areas of Taroona and Kingston Beach.

By way of contrast, the City of Hobart is barely managing to hold its population. The very difficult and steep terrain on the fringe of the city (but still within its boundaries) makes subdivision of land an unattractive proposition while housing conditions in the older streets no longer meet the requirements of today's generation. With more attractive land available in Glenorchy and Clarence, home builders have tended to look beyond the city limits; while Hobart proper has failed to record increase as a residential centre, nevertheless its inner area has grown as the main centre of general and commercial employment, although the industrial areas of Moonah and Glenorchy nearly match it. The transportation problems of the "S.M. area" arise from the concentration of the principal places of employment in a relatively small area and the spread of residential areas not associated with any local centre of employment. (For example, most of the work-force resident in Clarence needs to cross the Derwent daily.)

Present Highway System

The present programme of freeway construction makes use of the Queen's Domain as an oversize roundabout (or traffic circle). From this circle, three outlet roads will carry traffic on 4-lane freeways; the northern and eastern outlets have already been built, the southern is now under construction. A limitation of the northern outlet is that its main catchment area is on its western side, but foothills and existing buildings prevented a location further to the west. The eastern outlet, after passing over the new Tasman Bridge, is met by various contributory road links giving quick access to popular suburbs such as Lindisfarne and Howrah.

The construction of the third freeway, the Southern Outlet Road, was started in the winter of 1964. This road, to be blasted out of solid dolerite for a considerable distance, will open up a new area for development in the Kingston district.

When completed, the freeway system should do much to relieve the present threat of crowded highways.

The Hobart Area Transportation Study which examined these matters in greater detail, brought to public scrutiny the need for greatly increased expenditure in meeting traffic problems. Preliminary findings of the study are that metropolitan traffic will increase nearly 100 per cent during the next 20 years and that a number of major new roads will be required. Whether the financial resources of local government can carry the burden is open to question, since the programme will require not just construction, but also considerable acquisition of valuable property.

Industrial Areas in the "S.M. Area"

One of the most difficult town planning problems in the "S.M. area" is that associated with industrial zoning. The mere designation in the master plan of certain land for industrial use is no guarantee that new industries will automatically come forward to take advantage of the land. Few, generally speaking, have adjusted their thinking to appreciate the latest trends in factory siting, industrial estates, site preparation and site development. However, the member-councils and the Authority have started a campaign to publicise the advantages of properly organised industrial sites. This objective can be viewed as supplementary to the efforts of the State Industrial Development Branch which is endeavouring to attract more industry to the State.

The siting of industrial zones requires, in the main, reasonably flat ground with good foundations. In the "S.M. area", this becomes a very real topographic problem as the flat land so necessary for general industry is slowly

but steadily being used up for residential subdivisions. Present legislation lacks the power to prevent this erosion while the local government authorities do not have the financial resources to undertake major ventures into real estate. So completely has residential settlement used up suitable land near the heart of the city that the major proposed industrial zones have had to be located in Bridgewater, Margate, Rokeby and Cambridge (all some miles distant from central Hobart).

The Authority is currently engaged in a study of industrial sites and is making use of the specialised knowledge of other departments and organisations. From this study will emerge various recommendations together with detailed reports on the sites in the proposed zones.

FINANCE

Introduction

For many years, local government in Tasmania operated in 49 areas, comprising 47 municipalities and the Cities of Hobart and Launceston. As from 24th October, 1964, a third city—Glenorchy—came into being and the number of municipalities fell to 46. There are no unincorporated areas.

Local government finance statistics in Tasmania are compiled by the Bureau of Census and Statistics from the following sources:

1. *The 47 municipalities*—each municipality is required to submit annually to the Auditor General a "Statement of Accounts" in pursuance of section 329 of the *Local Government Act 1962*; copies of these statements are made available to the Bureau. The "Statements of Accounts" are compiled by the municipalities on a *receipts and payments* basis and two basic types of accounts are distinguished, namely revenue and loan accounts.

2. *The cities*—the Cities of Hobart and Launceston submit annually to the Auditor General statements of accounts compiled on an *income and expenditure* basis; to facilitate early preparation of statistics of total local government finance, the cities make available to the Bureau special statements prepared on a *receipts and payments* basis.

The term "local government" is employed only in relation to the municipalities and city corporations.

Revenue from Rates

The principal source of revenue for local government authorities in Tasmania is the charging of rates on the annual value of property. For any property, the annual value is the gross annual rental estimated by the valuer on the basis of similar actual rentals at the time of the valuation, irrespective of whether the property is rented or owner-occupied.

Under the *Local Government Act 1962*, rates may be based on annual value, unimproved value (i.e. value of land only), the capital value (i.e. value of land plus improvements) or finally upon a composite value incorporating the unimproved value plus some arbitrary proportion of the value of improvements. In Tasmania, it has been usual for rates to be based on annual values despite isolated and unsuccessful campaigns in favour of taxing on unimproved value only. In estimating annual value, the valuer is taking into account not only the land but also the improvements (e.g. buildings) so there is, in actual fact, a close relation between total capital value of any property and its assessed annual value. The *Land Valuation Act 1950* fixes a minimum relationship between annual value and capital value (4 per cent) but sets no maximum.

The following table shows the total value of all rateable properties in the State and gives individual details for local government authorities with total capital value exceeding \$20,000,000 in 1963-64:

Value of Rateable Properties—Tasmania and Selected Municipalities and Cities (\$ million)

Municipality or City	Year Revalued (a)	1961-62		1962-63		1963-64	
		Total Capital Value	Assessed Annual Value	Total Capital Value	Assessed Annual Value	Total Capital Value	Assessed Annual Value
Hobart (City)	1963	181.02	9.12	187.33	9.75	273.53	17.00
Launceston (City) ..	1958	112.22	7.00	114.44	7.16	115.95	7.28
Glenorchy	1962	67.20	3.07	100.08	5.82	102.42	6.06
Clarence	1956	45.04	1.90	50.14	2.14	54.20	2.01
Burnie	1959	48.61	2.80	49.73	2.85	51.94	2.93
Devonport	1962	30.36	1.60	44.09	2.59	46.17	2.67
St. Leonards	1959	24.32	1.11	25.79	1.19	27.96	1.27
Kingborough	1961	24.70	1.17	24.82	1.16	25.71	1.21
Wynyard	1961	21.49	1.04	21.89	1.05	22.17	1.06
Circular Head	1963	15.24	0.67	15.74	0.68	21.46	0.97
Longford	1963	13.20	0.60	13.34	0.60	20.82	1.00
Ulverstone	1957	19.69	0.96	20.21	1.01	20.66	1.01
New Norfolk	1957	19.48	0.82	20.07	0.84	20.52	0.86
Remaining Municipalities ..	..	247.51	11.03	255.21	11.78	271.58	12.18
Total Tasmania .. ..	..	870.08	42.89	942.88	48.62	1075.09	57.51

(a) The year shown is the year of the latest complete revaluation.

System of Valuation

The valuation of property is carried out by a State Government authority, the Land Valuation Branch; its valuations form the basis for two distinct taxes: (i) land tax collected by the State on the basis of unimproved land values; (ii) rates collected by local government authorities on the basis of assessed annual values. Since it is impossible to value all the properties within the State in the course of a single year, valuation is carried out on a rotational basis, e.g. Glenorchy valued in 1955 and again in 1962; Devonport valued in 1956 and again in 1962.

The table that follows shows total value of property over the last ten years:

Total Property Valuation in Cities and Municipalities (a)
(\$ million)

Year	Unimproved Value	Value of Improvements	Capital Value	Year	Unimproved Value	Value of Improvements	Capital Value
1954 ..	83.6	212.8	296.4	1959-60	179.0	560.4	739.4
1955 ..	93.8	251.4	345.2	1960-61	186.0	622.2	808.2
1956 ..	130.2	365.2	495.4	1961-62	193.6	676.5	870.1
1957-58 ..	140.6	413.4	554.0	1962-63	216.1	726.8	942.9
1958-59 ..	164.6	488.8	653.4	1963-64	271.6	803.5	1075.1

(a) As valued by State Valuation Branch.

The total assessed annual value of property in cities and municipalities has been (in \$million): 1953-54, 13.8; 1954-55, 15.8; 1955-56, 18.6; 1956-57, 25.4; 1957-58, 28.2; 1958-59, 33.4; 1959-60, 37.4; 1960-61, 40.0; 1961-62, 42.9; 1962-63, 48.6; 1963-64, 57.5.

It should not be assumed that increases in assessed annual value automatically increase the capacity of municipalities to raise revenue from rates. Thus, in the years 1953-54 to 1963-64, total annual values increased by 317 per cent; in the same period, total rates collected increased by only 159 per cent. When any municipality is revalued, the council normally reduces the "rate in the dollar" rather than exploit to the full the possibility of charging "old" rates on "new" annual values.

Total Receipts and Expenditure

The next table shows the total receipts and expenditure of Tasmanian municipalities and cities, the annual surplus or deficit and the balance of funds at the commencement of each year:

Local Government Authorities
Total Receipts and Expenditure—All Funds
(\$'000)

Year	Open- ing Bal- ance (a)	Receipts				Expenditure			Surplus (+) or Deficit (-)
		Loan Accounts (b)	Revenue Accounts	Special Accounts (c)	Total	Loan Accounts	Revenue Accounts	Total	
1953-54	(d)	(d)	6,642	(d)	(d)	1,758	6,506	8,264	(d)
1954-55	(d)	(d)	6,972	(d)	(d)	2,408	7,052	9,460	(d)
1955-56	1,950	2,422	6,386	+ 6	8,814	2,730	6,596	9,326	- 512
1956-57	1,438	2,352	7,418	- 281	9,489	2,682	7,260	9,942	- 453
1957-58	985	4,110	7,998	- 143	11,965	3,238	7,902	11,140	+ 825
1958-59	1,810	3,622	8,836	+ 99	12,557	3,542	8,836	12,378	+ 179
1959-60	1,989	5,308	9,782	+ 3	15,093	4,670	9,762	14,432	+ 661
1960-61	2,650	5,420	10,868	- 155	16,133	5,260	10,924	16,184	- 51
1961-62	2,599	6,447	12,098	+ 39	18,584	5,658	11,778	17,436	+ 1,148
1962-63	3,747	6,873	13,764	+ 690	21,327	7,212	13,256	20,468	+ 859
1963-64	4,606	7,268	14,792	+ 242	22,302	7,431	14,654	22,085	+ 217

(a) Bank balances (less unrepresented cheques), securities and cash on hand. Closing balance at 30-6-64 was \$4,823,000.

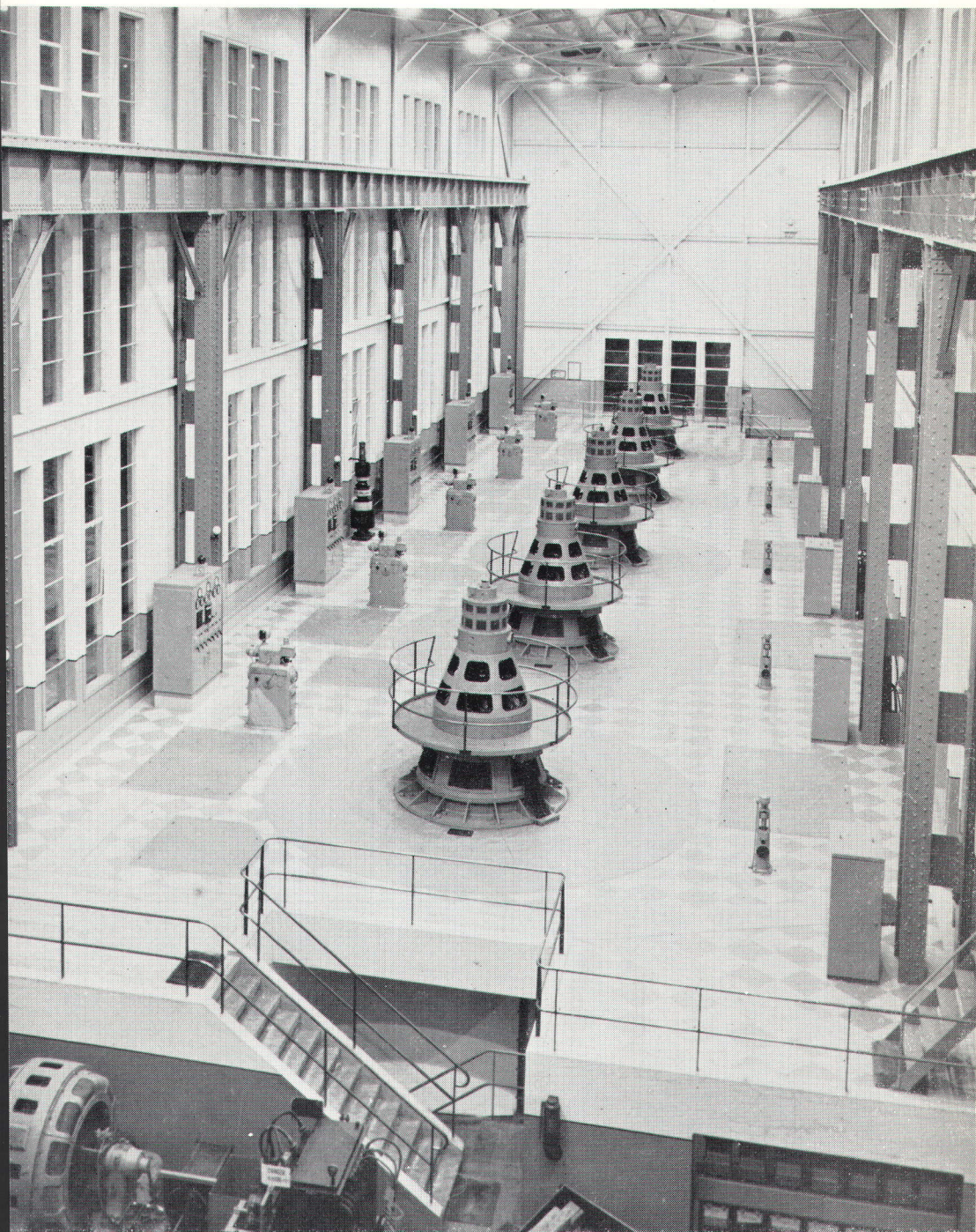
(b) Includes loan raisings, sales, capital grants received, etc.

(c) Net movement in Trust and Special Accounts of Hobart and Launceston Corporations; in 1960-61, includes inter-authority transfer of \$118,534 from Beaconsfield Municipality to Rivers and Water Supply Commission.

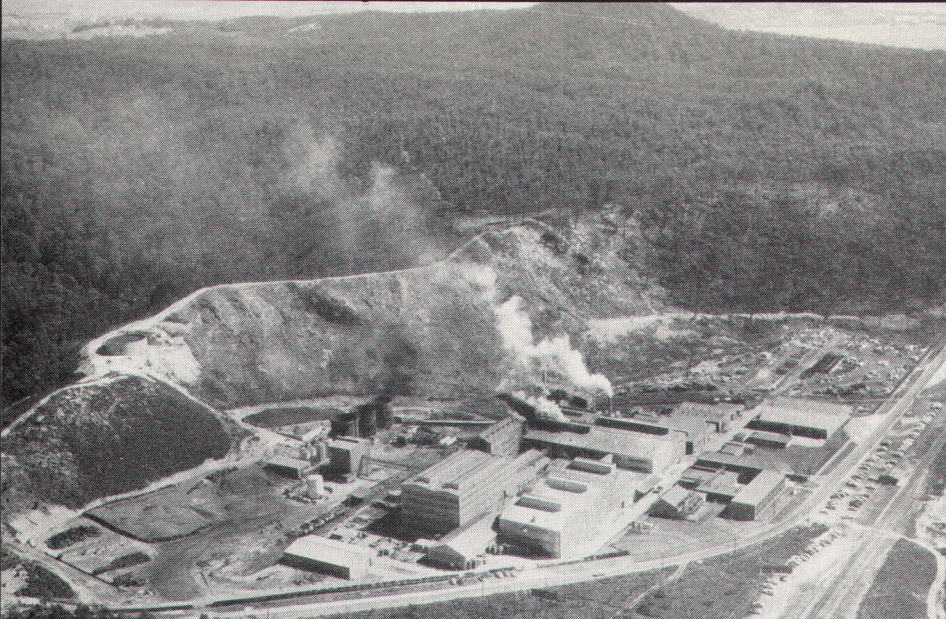
(d) Not available.

Rate Collections

There is considerable diversity in the types of rate imposed by individual local government authorities. In Hobart, virtually all properties are subject to the one consolidated rate and a similar position exists in Launceston; in most municipalities, however, the property holder, after being charged the basic general, road, light and health rates, is subject also to additional rates assessed according to the location of the property and the nature of the services provided (e.g. a fire brigade rate for properties which are close enough to



*Part of Tungatimah Power Station.
(Hydro-Electric Commission)*



*Titanium di-
oxide plant of
Australian
Titan Products
Pty. Ltd.
near Burnie.
(Dept. of
Industrial
Development)*

*Plant of the Electrolytic Zinc Company (A/sia) Ltd. at Risdon with Hobart's northern suburbs in the background.
(Dept. of Film Production)*



enjoy fire protection, a water rate for properties connected to the supply). Property holders in a particular district may be called upon to pay a special rate for an improvement peculiar to the district (e.g. a reserves and recreation rate to finance a sports ground or a garbage rate to finance a disposal service).

The following table shows details of the rates collected in Tasmania during a three-year period:

Rates Collected by Local Government Authorities
(£'000)

Particulars	1961-62	1962-63	1963-64
Ordinary Rates—			
General	2,582	2,642	2,908
Light	160	170	178
Road	1,908	2,086	2,172
Health	270	290	297
Sanitary	90	84	71
Garbage	66	88	114
Reserves and Recreation	406	446	482
Halls	60	64	67
Library	52	62	69
Fire Brigade	34	34	33
Other	40	64	73
Total	5,668	6,030	6,464
Business Undertaking Rates—			
Water	1,640	1,842	1,993
Sewerage	776	838	954
Total	2,416	2,680	2,947
Grand Total	8,084	8,710	9,411

Business Undertakings

In the preceding table a distinction is drawn between "ordinary" rates and "business undertaking" rates; a similar distinction will be found in the subsequent analysis of revenue and expenditure.

The classification "business undertaking" is used in Australian local government finance statistics to include municipal tram and bus services, municipal electricity supply (generation or distribution), municipal water and sewerage schemes and municipal abattoirs, etc. In Tasmanian local government finance statistics, electricity supply ceased to appear as from 1948-49 (the Hydro-Electric Commission is now the sole supplier). Municipal tram and bus services ceased to appear as an item in 1955-56, the Metropolitan Transport Trust having acquired the city transport services operating in Hobart and Launceston. Consequently, the only activities under the heading of municipal "business undertakings" in current Tasmanian statistics relate to water supply, sewerage and abattoirs.

Revenue of Local Government Authorities

After rates, the most important sources of revenue are: (i) Government grants and refunds; (ii) charges for public works and services. Among sources of revenue are listed "council properties"; these include parks, recreation

grounds, markets, halls, cemeteries, libraries, mechanical plant, &c. The next table shows, for a three-year period, the total annual revenue of all municipalities and cities:

Local Government Authorities
Revenue, Ordinary Services and Business Undertakings, Classified According to Source
(\$'000)

Source of Revenue	1961-62	1962-63	1963-64
Ordinary Services—			
Rates	5,668	6,030	6,464
Licences	66	68	77
Total	5,734	6,098	6,541
Public Works and Services—			
Health, Sanitary and Garbage Services	46	56	50
Council Properties	660	780	722
Private Street Construction	36	48	12
Private Works	182	308	444
Other	140	146	118
Total	1,064	1,338	1,346
Government Grants and Refunds—			
Roads	1,194	1,340	1,267
Other	144	708	825
Total	1,338	2,048	2,092
Other Revenue (a)	270	312	499
Total Ordinary Services	8,406	9,796	10,478
Business Undertakings—			
Water Supply and Sewerage—			
Rates	2,416	2,680	2,947
Charges and Sales	432	352	364
Grants (Government) (b)	352	362	351
Other	84	92	78
Total	3,284	3,486	3,740
Abattoirs—			
Charges for Service	260	292	309
Other (including Sale of Products)	148	190	265
Total	408	482	574
Total Business Undertakings	3,692	3,968	4,314
Grant Total—Revenue	12,098	13,764	14,792

(a) Includes net receipts of Deposit and Superannuation Accounts.

(b) These figures understate actual receipts since some municipalities offset their grants against payments made to State regional water schemes.

Revenue, Summary

In the preceding table, the dissection between ordinary services and business undertakings prevents totals emerging for rates and for government grants; details for these items, in total, are shown in the summary which follows:

Revenue, Ordinary Services and Business Undertakings
(\$'000)

Year	Total Rates	Licences	Total Govt. Grants and Refunds	Business Undertakings (a)	Ordinary Municipal Services (b)	Other Revenue	Total Revenue
1953-54 ..	3,630	30	410	1,790	508	274	6,642
1954-55 ..	3,836	28	718	1,508	622	260	6,972
1955-56 ..	4,418	30	646	428	624	240	6,386
1956-57 ..	5,188	30	722	492	756	230	7,418
1957-58 ..	5,434	30	852	582	816	284	7,998
1958-59 ..	5,962	30	788	714	1,014	328	8,836
1959-60 ..	6,622	58	950	870	918	364	9,782
1960-61 ..	7,286	60	1,240	842	1,068	372	10,868
1961-62 ..	8,084	66	1,690	924	1,064	270	12,098
1962-63 ..	8,710	68	2,410	926	1,338	312	13,764
1963-64 ..	9,411	77	2,443	1,016	1,346	499	14,792

(a) Excludes rates and grants which are shown separately; undertakings are water and sewerage, abattoirs and tramways (tramways excluded from 1955-56, Hobart and Launceston transport services having been taken over by the Metropolitan Transport Trust).

(b) Includes receipts from council properties, e.g. sports grounds, halls, etc.

Expenditure of Local Government Authorities

The following table shows, for a three-year period, annual expenditure by local government authorities from ordinary revenue and from the revenue of business undertakings:

Local Government Authorities

Expenditure, Ordinary Services and Business Undertakings, Classified According to Service
(\$'000)

Expenditure On	1961-62	1962-63	1963-64
Ordinary Services—			
General Administration	910	988	1,183
Debt Services—Interest	578	778	856
Redemption	648	730	847
Total	1,226	1,508	1,703
Public Works and Services—			
Roads, Streets, Bridges	3,620	3,990	4,160
Health	174	204	212
Sanitary and Garbage Services	264	290	296
Street Lighting	238	238	264
Parks, Recreation Grounds, etc.	602	852	896
Other Council Properties	558	809	837
Other Services	42	110	42
Total	5,498	6,493	6,707
Grants	256	257	366
Other Expenditure (a)	270	188	323
Total Ordinary Services	8,160	9,434	10,282

Expenditure, Ordinary Services and Business Undertakings, Classified According to Service—continued
(£'000)

Expenditure On	1961-62	1962-63	1963-64
Business Undertakings—			
Water Supply and Sewerage—			
Working Expenses (b)	1,628	1,524	1,924
Interest	922	1,094	1,183
Redemption	608	690	784
Other	96	132	53
Total	3,254	3,440	3,944
Abattoirs—			
Working Expenses	316	332	377
Interest	26	28	30
Redemption	20	22	21
Other	2	..	..
Total	364	382	428
Total Business Undertakings ..	3,618	3,822	4,372
Grand Total—Expenditure ..	11,778	13,256	14,654

(a) Excludes expenditure from Deposit and Superannuation Accounts, which are offset against receipts.

(b) These figures understate actual payments since some municipalities offset their payments to State regional water schemes against grants received from the State.

“Council properties” in the table includes, in the main, halls, markets, cemeteries and libraries. “Roads, Streets and Bridges” includes roads construction and maintenance, drainage, cleaning and watering streets, private street construction, private works, plant purchase and net plant maintenance costs. The item “grants” includes payments to fire brigades and other semi-governmental bodies. The item “redemption” includes additions to sinking funds reserved for debt redemption.

Expenditure, Summary

In the preceding table, the dissection between ordinary services and business undertakings prevents totals emerging for debt services; details of total interest and total redemption payments appear in the summary below:

Expenditure, Ordinary Services and Business Undertakings
(£'000)

Year	Adminis- tration	Total Loan Charges		Ordinary Services(a)		Business Undertak- ings (a) (b)	Total
		Interest	Redem- tion	Roads, Streets, Bridges	Other		
1953-54 ..	436	416	634	1,586	1,496	1,938	6,506
1954-55 ..	468	500	592	2,018	1,596	1,878	7,052
1955-56 ..	542	554	618	2,128	1,770	984	6,596
1956-57 ..	596	652	704	2,320	1,944	1,046	7,262
1957-58 ..	706	722	816	2,434	1,906	1,320	7,904
1958-59 ..	782	922	888	2,658	2,154	1,432	8,836
1959-60 ..	884	1,096	1,000	2,914	2,168	1,700	9,762
1960-61 ..	880	1,294	1,158	3,350	2,396	1,846	10,924
1961-62 ..	910	1,526	1,276	3,620	2,404	2,042	11,778
1962-63 ..	988	1,900	1,442	3,990	2,948	1,988	13,256
1963-64 ..	1,183	2,069	1,652	4,160	3,236	2,354	14,654

(a) Excluding interest and redemption shown separately.

(b) Undertakings are water and sewerage, abattoirs and tramways, (tramways excluded from 1955-56, Hobart and Launceston transport services having been taken over by the Metropolitan Transport Trust).

Loan Receipts

At 30th June, 1964, the aggregate debt of all local government authorities was \$44,063,320 of which only \$990,284 (i.e. 2.2 per cent) was in respect of loans received from the State Government. The principal Tasmanian sources of loans for local government authorities are banks, superannuation and other trust funds, insurance companies and, in the case of the cities, public issues. The amount that any local government authority can raise in a particular year is governed not only by the difficulty in finding willing lenders, but also by the fact that the approval of the State Treasury is required; under the "Gentlemen's Agreement", the Australian Loan Council regulates the amount to be borrowed annually by semi-governmental and local government authorities, this being put into effect within the State by the State Treasury.

The following table shows, for a three-year period, the receipts taken into the loan accounts of all local government authorities:

Local Government Authorities—Receipts Taken into Loan Account
(*\$'000*)

Particulars	1961-62	1962-63	1963-64
Loan Raisings—			
For Ordinary Services	3,094	3,033	3,259
For Water and Sewerage	3,060	2,284	2,537
For Abattoirs	10	8	50
Total Raisings	6,164	5,325	5,846
Government Capital Grants	180	1,332	1,280
Offsets to Loan Expenditure (a)	103	216	142
Total Receipts	6,447	6,873	7,268

(a) e.g. sales of surplus materials, refunds on containers, &c.

Loan Expenditure and Loan Debt

The next table shows, for a three-year period, details of expenditure from the loan accounts of all local government authorities; also the loan debt at 30th June, 1964:

Local Government Authorities—Annual Loan Expenditure and
Loan Debt Classified According to Purpose
(*\$'000*)

Purpose	Annual Loan Expenditure			Loan Debt at 30th June 1964
	1961-62	1962-63	1963-64	
Water	1,736	1,870	1,415	13,660
Sewerage	1,118	1,438	1,665	10,113
Drainage	92	154	183	936
Roads, Bridges, Streets, Footpaths	1,538	1,716	1,697	8,755
Plant, Machinery, etc.	168	218	180	} 6,017
Council Property, including Halls	464	716	876	
Recreation, including Parks and Gardens	486	568	694	3,260
Other	56	532	721	(a) 1,322
Total	5,658	7,212	7,431	44,063

(a) Includes \$1,073,566, debt of Hobart Corporation in respect of Town Planning.

Loan Summary

The following table shows, in summary form, loan raisings, loan debt and sinking funds:

Local Government Authorities—Loan Raisings, Loan Debt and Sinking Funds
(\$'000)

Year	Loan Raisings During Financial Year			Loan Debt at 30th June			Total of Sinking Funds at 30th June (c)
	From State Government (a)	From Other Sources (b)	Total	To State Government	To Other Creditors	Total	
1953-54 ..	..	2,418	2,418	181	13,419	13,600	538
1954-55 ..	..	2,796	2,796	159	15,444	15,603	452
1955-56 ..	..	2,367	2,367	144	(d) 15,245	(d) 15,389	343
1956-57 ..	..	2,310	2,310	129	16,838	16,967	336
1957-58 ..	..	4,024	4,024	114	20,078	20,192	351
1958-59 ..	43	3,642	3,685	144	22,835	22,979	388
1959-60 ..	138	5,094	5,232	268	26,876	27,144	422
1960-61 ..	269	5,010	5,279	524	30,763	31,287	473
1961-62 ..	301	5,863	6,164	808	35,380	36,188	561
1962-63 ..	116	5,209	5,325	853	38,989	39,842	662
1963-64 ..	165	5,681	5,846	990	43,073	44,063	817

(a) These advances were from the State Treasury direct, and exclude those from authorities such as the Housing Department and the Metropolitan Transport Trust.

(b) Includes advances from the Housing Department and the Metropolitan Transport Trust.

(c) Sinking funds maintained by municipalities and cities for debt redemption purposes.

(d) The decrease is due to the exclusion of the debt associated with Hobart and Launceston tramways, the Metropolitan Transport Trust having taken these services over.

Source of Loan Funds

It can be seen from the preceding table that the local government loan debt includes only a small liability in respect of advances made by the State Treasury. The proportion of total debt now owed to State authorities (but not directly to the Treasury) has increased somewhat, principally due to co-operation between individual municipalities and the State Housing Department. In planning the establishment of large housing estates, the Housing Department has been concerned with the provision of certain essential services (e.g. water and sewerage); where such services have required capital expenditure by a municipality, the Department has made some loan funds available. The debt of the municipalities to the Housing Department at 30.6.64, and excluded from "State Government Loans", was \$887,506.

Instalment Debentures

Much of the debt of the municipalities is in the form of Instalment Debentures which involve equal periodic payments (usually yearly or half-yearly); such payments are credited to redemption and interest in changing proportions, the accounting being the same as used to record home instalment purchase transactions.

Financial Statistics of Individual Local Government Authorities

In this chapter, local government finance statistics have been presented in total only; similar details for individual authorities are shown annually in "Statistics of the State of Tasmania—Local Government Finance". The

following table shows, for each municipality and city: (i) rates collected; (ii) expenditure from loan and revenue accounts; (iii) balance of funds; (iv) loan debt.

Individual Municipalities and Cities: Financial Summary, 1963-64
(\$'000)

Municipality or City and Statistical Divisions	Total Rates Collected	Expenditure		Funds at 30-6-64 (a)	Loan Debt at 30-6-64
		Loan Accounts	Revenue Accounts		
South Central Division—					
Hobart (City)	2,211.9	2,046.4	2,721.8	1,506.4	10,884.6
Glenorchy	947.5	1,074.9	1,282.1	(-)163.7	5,678.7
North Central Division—					
Launceston (City)	1,449.9	784.4	2,613.7	1,465.5	5,344.9
North Western Division—					
Burnie	481.4	205.0	653.6	201.8	1,887.9
Circular Head	133.2	16.2	281.2	49.0	186.9
Deloraine	79.3	1.6	153.3	37.9	201.4
Devonport	401.3	297.1	641.3	84.2	2,557.2
Kentish	79.0	3.1	137.7	23.7	167.9
King Island	64.0	100.5	67.3	162.3	290.5
Latrobe	106.3	45.2	148.8	30.5	560.5
Penguin	73.5	73.5	119.4	42.6	391.6
Ulverstone	193.7	339.2	337.3	156.8	1,510.3
Wynyard	167.6	108.6	232.7	98.5	666.9
North Eastern Division—					
Beaconsfield	194.0	103.6	320.2	41.0	1,287.6
Fingal	54.6	16.1	97.1	13.2	184.7
Flinders	32.6	29.0	94.7	23.7	60.1
George Town	144.2	113.4	242.4	(-) 18.6	732.8
Lilydale	115.5	52.7	191.9	78.3	564.9
Portland	29.8	7.3	65.8	1.1	58.5
Ringarooma	53.5	10.6	109.3	21.0	127.6
Scottsdale	71.9	9.1	129.7	53.8	273.5
North Midland Division—					
Evandale	34.8	34.4	59.1	2.8	46.5
Longford	106.5	109.9	169.5	42.9	414.4
St. Leonards	272.7	253.3	423.8	271.8	1,850.0
Westbury	86.9	38.6	144.7	57.6	287.6
Midland Division—					
Bothwell	26.9	5.2	52.1	(-) 1.0	33.0
Campbell Town	40.1	26.5	81.0	31.7	93.6
Hamilton	35.9	2.7	67.6	33.0	56.3
Oatlands	62.1	27.1	93.1	41.7	112.5
Ross	21.4	..	35.8	15.4	13.0
South Eastern Division—					
Brighton	38.7	3.9	63.8	23.4	71.6
Clarence	648.2	713.5	1,052.3	86.7	4,104.7
Glamorgan	30.0	6.8	53.9	9.6	88.6
Green Ponds	18.1	..	31.6	17.2	48.1
Richmond	30.7	16.4	52.2	12.9	119.8
Sorell	62.2	2.2	179.7	4.7	118.6
Spring Bay	27.3	7.8	61.5	3.1	79.1
Southern Division—					
Bruny	8.4	..	27.3	5.2	4.1
Esperance	59.6	66.7	92.6	64.9	218.6
Huon	82.8	60.0	140.7	27.3	361.5
Kingborough	235.9	415.9	323.7	27.5	1,127.6
New Norfolk	171.5	59.0	326.3	60.1	668.4
Port Cygnet	41.5	22.2	96.6	(-) 2.1	224.7
Tasman	15.3	..	30.9	1.1	10.8

Individual Municipalities and Cities: Financial Summary, 1963-64—continued
 (\$'000)

Municipality or City and Statistical Divisions	Total Rates Collected	Expenditure		Funds at 30-6-64 (a)	Loan Debt at 30-6-64
		Loan Accounts	Revenue Accounts		
Western Division—					
Gormanston	11.8	0.4	13.2	4.3	10.2
Queenstown	86.7	117.7	101.5	46.0	127.2
Strahan	8.8	3.4	92.5	2.1	8.6
Waratah	5.7	..	21.7	5.4	..
Zeehan	55.6	0.4	123.9	19.1	145.3
Total	9,410.8	7,431.5	14,653.9	4,823.4	44,063.4

(a) Value of bank balances (less unrepresented cheques), securities and cash on hand. A minus sign (—) indicates a debit balance.

Chapter 5

DEMOGRAPHY

POPULATION

Historical

In 1803, Lieutenant John Bowen's expedition of 49 persons made the first white settlement at Risdon Cove; at the 30th June, 1965, Tasmania's population was estimated as 366,024 persons. This section describes, in broad outline, the pattern of population growth from the days of the first settlement.

The "Statistical Tables, Tasmania, 1804 to 1823" show the first population record in 1816 when the white inhabitants numbered 1,461, analysed as 1,032 free, 409 convicts and 20 children of convicts. In 1819, a "Muster Roll" was taken by Commissary Hull, his count being 4,411 persons. From the year 1816, there exists a continuous annual record of Tasmania's population.

Source of Population Figures

There are two principal methods by which population figures can be obtained: (i) by census enumeration; (ii) by application of vital and migration statistics to census data. The second method involves taking account of natural increase (excess of births over deaths), and net migration (excess of arrivals over departures) and applying these net figures to information obtained from an earlier census, the result being termed an intercensal estimate.

In the early days of settlement, frequent "musters" of the population were carried out but the first census, in the modern sense, dates from 1841. Subsequent censuses were conducted by the State in 1847, 1851, 1857, 1861, 1870, 1881, 1891 and 1901; the Commonwealth Statistician became responsible for censuses with the establishment of the Commonwealth Bureau of Census and Statistics and conducted them in 1911, 1921, 1933, 1947, 1954 and 1961. There is some doubt as to the extent and reliability of the data used in making the earlier intercensal estimates; birth and death registrations appear as a continuous published series from 1828 while the immigration and emigration published series commences from 1847, although earlier official records are known to have been available to those concerned with preparing estimates.

Population from 1820

The table that follows is based on the traditional historical series and has been compiled to show the population at the end of each decade from 1820, and also to show the average annual growth in each decade on two bases, firstly gross and secondly, attributable to natural increase. There is a minor break in the comparability of the traditional historical series, the British military establishment being included up to 1842 but excluded in subsequent years. The effect of this break can be gauged when the strength of the establishment is taken as approximately 1,000 both in 1840 and 1850.

Historical Summary of Population in Decades

Year	Estimated Population (a)			Average Annual Increase For Decade (b)	
	Males	Females	Persons	Total Population	From Natural Increase (c)
1820	4,057	1,343	5,400	..	..
1830	18,108	6,171	24,279	1,888	..
1840	32,040	13,959	45,999	2,172	106
1850	44,229	24,641	68,870	2,287	656
1860	49,653	40,168	89,821	2,095	1,214
1870	53,517	47,369	100,886	1,107	1,622
1880	60,568	54,222	114,790	1,390	1,542
1890	76,453	68,334	144,787	2,998	2,496
1900	89,763	83,137	172,900	2,811	2,776
1910	97,026	92,781	189,807	1,691	3,322
1920	106,236	103,189	209,425	1,962	3,649
1930	111,148	108,835	219,983	1,056	3,127
1940	121,911	118,280	240,191	2,021	2,438
1950	140,339	135,563	275,902	3,571	3,768
1960	174,379	169,531	343,910	6,801	5,523
1965 (d) ..	185,344	180,680	366,024	4,423	5,500
1966 (e) ..	187,267	183,950	371,217	..	..

(a) Up to 1900, at 31st December; from 1910, at 30th June.

(b) Decade ending in year shown.

(c) Excess of births over deaths in calendar years.

(d) Incomplete decade; averages based on five-year period only.

(e) Preliminary Census figures.

Pattern of Net Migration

By comparing the last two columns in the previous table, it is possible to make an assumption as to whether net migration (excess of arrivals over departures) tended to be positive or negative in any decade. Thus, in the six decades ended 1860, growth of population was largely attributable to positive net migration with natural increase playing only a minor role; growth in this period was temporarily set back by something of an exodus to the Victorian goldfields in the 1850's.

In the next two decades ended 1880, natural increase was becoming a more significant factor but the growth of population was checked by negative net migration. Important mining discoveries (e.g. Mt. Bischoff, Zeehan and Mt. Lyell) brought prosperity to the State, and the two decades ended 1900 were characterised by positive net migration despite an Australia-wide depression in the early 1890's.

The main characteristic of the five decades ended 1950 was persistent loss of population due to negative net migration, the decade most affected ending in 1930; the decade 1921-1930 was one of general prosperity for Australia apart from the final two years and the implication of the population loss is that Tasmania was "depressed" even before the general depression. This trend in net migration loss persisted till the end of World War II (1945). The Commonwealth Government's post-war immigration policy and the increasing industrialisation of the State combined to reverse the adverse trend of the previous half-century, and the last decade, ending 1960, was characterised by positive net migration. In the present incomplete decade, loss of population by negative net migration is becoming apparent.

Census Populations from 1841

The following table records the population and masculinity at each Census since 1841 and compares the rate of inter-censal growth.

Population and Masculinity at each Census from 1841

Census Date	Population			Average Annual Percentage Rate of Increase (a)	Masculinity (b)
	Males	Females	Persons		
31st Dec., 1841 ..	34,493	17,006	51,499	..	202.83
31st Dec., 1847 ..	47,828	22,336	70,164	5.29	214.13
1st March, 1851 ..	44,648	25,482	70,130	— 0.01	175.21
31st March, 1857 ..	46,606	34,886	81,492	2.53	133.60
7th April, 1861 ..	49,593	40,384	89,977	2.51	122.80
7th Feb., 1870 ..	52,853	46,475	99,328	1.11	113.72
3rd April, 1881 ..	61,162	54,543	115,705	1.40	112.14
5th April, 1891 ..	77,560	69,107	146,667	2.40	112.23
31st March, 1901 ..	89,624	82,851	172,475	1.64	108.18
3rd April, 1911 ..	97,591	93,620	191,211	1.04	104.24
4th April, 1921 ..	107,743	106,037	213,780	1.12	101.61
30th June, 1933 ..	115,097	112,502	227,599	0.52	102.31
30th June, 1947 ..	129,244	127,834	257,078	0.87	101.10
30th June, 1954 ..	157,129	151,623	308,752	2.65	103.63
30th June, 1961 ..	177,628	172,712	350,340	1.82	102.85
30th June, 1966 (c)	187,267	183,950	371,217	1.16	101.80

(a) Intercensal increase in total population as compound rate of growth per cent.

(b) Number of males per 100 females.

(c) Preliminary figures.

It should be noted that the Census figures up to 1870 include the British military establishment; the last Imperial troops were withdrawn later in 1870. (The traditional annual series previously quoted excludes the establishment after 1842.)

Comparison with other States

The following table compares the Tasmanian population at successive Censuses from 1901 with that of other States and Territories:

Australia: Census Populations of States and Territories ('000 Persons)

State or Territory	1901	1911	1921	1933	1947	1954	1961
N.S.W.	1,355	1,647	2,100	2,601	2,985	3,424	3,917
Victoria	1,201	1,315	1,531	1,820	2,055	2,452	2,930
Queensland	498	606	756	947	1,106	1,318	1,519
S.A.	359	409	495	581	646	797	969
W.A.	184	282	333	439	502	640	737
Tasmania	172	191	214	228	257	309	350
N.T.	5	3	4	5	11	17	27
A.C.T. (a) .. ..	..	2	3	9	17	30	59
Australia	3,774	4,455	5,436	6,630	7,579	8,987	10,508

(a) Part of New South Wales prior to 1911.

The next table shows the average annual rate of increase of population in each State and Territory during successive intercensal periods from 1901-1911.

Australia: Average Annual Percentage Rate of Increase of Population During Intercensal Periods

State or Territory	1901-11	1911-21	1921-33	1933-47	1947-54	1954-61
N.S.W.	1.97	2.46	1.76	0.99	1.98	1.94
Victoria	0.91	1.53	1.42	0.87	2.56	2.58
Queensland	1.98	2.24	1.86	1.11	2.53	2.04
S.A.	1.32	1.94	1.31	0.76	3.05	2.83
W.A.	4.36	1.66	2.29	0.97	3.51	2.03
Tasmania	1.04	1.12	0.52	0.87	2.65	1.82
N.T.	3.67	1.57	1.87	5.93	6.12	7.40
A.C.T. (a) .. .. .	..	4.14	10.71	4.65	8.70	9.93
Australia	1.67	2.01	1.63	0.96	2.46	2.26

(a) Part of N.S.W. prior to 1911.

It will be observed that only in the period 1947-54 did the Tasmanian rate of growth exceed that for Australia as a whole and that 1921-33 was the period of minimum Tasmanian growth.

Intercensal Adjustment

Earlier, mention was made of the method for calculating intercensal estimates of population by taking account of recorded natural increase and recorded net migration. The following two tables show these factors in successive intercensal periods from 1911 to 1961 inclusive:

Analysis of Intercensal Increase in Population

(i) Recorded Natural Increase and Recorded Net Migration

Intercensal Period	Births	Deaths	Natural Increase	Arrivals	Departures	Net Migration
3.4.1911 to 4.4.1921 (a) ..	56,459	20,011	36,448	386,377	396,642	- 10,265
4.4.1921 to 30.6.1933 (b) ..	61,955	25,174	36,781	507,209	535,780	- 28,571
30.6.1933 to 30.6.1947 ..	73,130	34,767	38,363	482,577	493,305	- 10,728
30.6.1947 to 30.6.1954 ..	51,615	17,557	34,058	870,768	845,009	+ 25,759
30.6.1954 to 30.6.1961 ..	59,282	18,631	40,651	1,070,297	1,065,254	+ 5,043

(a) Numbers recorded between the March quarters of 1911 and 1921, i.e. the quarter nearest to the census date.

(b) Numbers recorded from the March quarter of 1921.

(ii) Census Population, Intercensal Records and Intercensal Adjustment

Census Date	Population	Numbers Recorded Since Previous Census		Intercensal Adjustment (a)
		Natural Increase	Net Migration	
4.4.1921 ..	213,780	36,448	- 10,265	- 3,614
30.6.1933 ..	227,599	36,781	- 28,571	+ 5,609
30.6.1947 ..	257,078	38,363	- 10,728	+ 1,844
30.6.1954 ..	308,752	34,058	+ 25,759	- 8,143
30.6.1961 ..	350,340	40,651	+ 5,043	- 4,106

(a) For definition, see following section.

In general, two population estimates are made for any specific date: (i) *Original* estimates for dates subsequent to a census made before another census is taken. These estimates represent the population ascertained at the census, plus natural increase and recorded net migration since the census. As complete records of interstate migration are not available, the estimated State population so derived is approximate and subject to revision when the actual population is ascertained at the next census. (ii) *Revised* estimates for each newly completed intercensal period to adjust for the difference between the new census result and the comparable estimate. This is to bring intercensal estimates into line with the two census populations and thus effect adjustment for unrecorded movement of population in the intercensal period.

Thus, all original estimates of population for the intercensal periods from 1911 to 1961 have been revised to reconcile with the results of successive censuses from 1921 to 1961 and can be regarded as final. Estimates of population for dates after 30th June, 1961, must be regarded as subject to revision, and will in fact be revised when the results of the 1966 census become available. In the preceding table, it will be seen that the intercensal adjustment for the latest period (1954 to 1961) was *minus* 4,106, equivalent to an average accumulating adjustment of approximately *minus* 587 per annum for revision of the original intercensal estimates.

Population Estimates from 1950

The following are estimates of State population since 1950:

Estimated Population, 30th June and 31st December

Year	At 30th June			At 31st December		
	Males	Females	Persons	Males	Females	Persons
1950	140,339	135,563	275,902	147,103	143,230	290,333
1951	145,279	140,914	286,193	153,721	148,066	301,787
1952	151,100	145,199	296,299	157,702	151,856	309,558
1953	155,161	148,919	304,080	161,305	155,160	316,465
1954 (a) ..	157,129	151,623	308,752	162,393	156,825	319,218
1955	159,861	154,231	314,092	165,356	159,563	324,919
1956	162,196	156,274	318,470	168,695	162,645	331,340
1957	165,940	160,190	326,130	172,186	166,621	338,807
1958	169,123	163,943	333,066	174,465	169,433	343,898
1959	172,097	167,279	339,376	178,109	173,240	351,349
1960	174,379	169,531	343,910	180,511	175,458	355,969
1961 (a) ..	177,628	172,712	350,340	185,661	178,473	364,134
1962	180,956	175,981	356,937	187,833	181,570	369,403
1963	182,743	178,577	361,320	189,515	184,125	373,640
1964	183,968	180,598	364,566	189,974	185,294	375,268
1965	185,344	180,680	366,024	191,808	187,299	379,107

(a) Figures at 30th June as recorded at Census.

"De Facto" and "De Jure"

In the preceding table, it will be observed that the State's estimated population in December invariably exceeds the figure for the following June. This originates in the fact that Australian censuses credit persons to the State where they happen to be at census date (*de facto* basis) and not to the State where they normally reside (*de jure* basis). It follows that the factors used in making intercensal estimates—natural increase and net migration—are necessarily compiled on the same basis, (e.g. a Victorian resident dying in

Tasmania is counted as a Tasmanian death for calculating natural increase; in calculating net migration, no distinction is made between a Tasmanian resident returning and a Victorian resident entering the State). Since intercensal estimates are produced on a *de facto* basis, the December estimates are inflated by positive net migration due to the seasonal tourist influx.

Mean Population

Mean populations are calculated for twelve-month periods to provide a satisfactory average basis for calculations requiring allowance for the continuous change in population figures during such periods, (e.g. a year's expenditure requires division by the mean population to produce per capita expenditure).

From 1901 onwards, the mean population for any year has been calculated by the formula:

$$\text{Mean Population} = \frac{a + 4b + 2c + 4d + e}{12}$$

where *a* is the population at the end of the quarter immediately preceding the year and *b*, *c*, *d* and *e* are the populations at the end of the quarters making up the year under consideration, (e.g. in the case of a mean population for the calendar year 1960, the populations in the formula represented by *a*, *b*, *c*, *d* and *e* are those at the following dates:—31.12.1959, 31.3.1960, 30.6.1960, 30.9.1960 and 31.12.1960).

The following table shows the State's mean population on two bases: (i) for financial years; (ii) for calendar years.

Mean Population, Financial and Calendar Years

Year	Estimated Mean Population		Year	Estimated Mean Population	
	Year Ended 30th June	Year Ended 31st December		Year Ended 30th June	Year Ended 31st December
1950 ..	274,493	278,785	1958 ..	332,046	335,382
1951 ..	283,526	288,294	1959 ..	338,628	341,423
1952 ..	293,340	298,361	1960 ..	344,111	346,913
1953 ..	302,529	306,318	1961 ..	350,077	353,613
1954 ..	309,416	311,055	1962 ..	356,686	359,408
1955 ..	312,694	315,565	1963 ..	362,111	364,280
1956 ..	318,309	321,039	1964 ..	366,187	367,359
1957 ..	324,666	328,435	1965 ..	368,086	369,421

Arrivals and Departures

Earlier in this chapter, reference was made to net migration as one factor determining the growth of the State's population. Net migration, for any period, is the difference between arrivals and departures, such movements being reported by the shipping companies and airlines. "Arrivals" in the following table applies to all persons arriving in Tasmania from overseas or from other Australian States; it includes Tasmanians returning home. Similarly, "departures" applies to all persons leaving Tasmania for overseas or for other Australian States; it includes visitors returning home. The table below shows

annual arrivals and departures since 1953 and also quarterly arrivals and departures since 1962, but the intercensal adjustments referred to in an earlier section have not been applied to the figures:

Recorded Arrivals In and Departures From Tasmania, Interstate and Overseas

Period	Arrivals	Departures	Period	Arrivals	Departures
1953 ..	127,484	125,812	1962—March Qr. ..	53,769	61,049
1954 ..	126,976	128,424	June Qr. ..	42,623	45,684
1955 ..	137,834	137,144	September Qr. ..	34,552	35,140
1956 ..	143,104	141,686	December Qr. ..	54,324	44,150
1957 ..	143,601	141,310	1963—March Qr. ..	58,364	65,112
1958 ..	141,814	141,995	June Qr. ..	44,404	48,703
1959 ..	162,761	160,569	September Qr. ..	36,898	37,438
1960 ..	182,537	183,513	December Qr. ..	58,777	48,665
1961 ..	186,423	184,165	1964—March Qr. ..	67,122	74,092
1962 ..	185,268	186,023	June Qr. ..	47,372	52,018
1963 ..	198,443	199,918	September Qr. ..	42,015	43,161
1964 ..	219,930	223,380	December Qr. ..	63,421	54,109
1965 ..	248,964	249,617			

If annual arrivals and departures are added, the result may conveniently be termed "annual movements" and a comparison of "annual movements" over the years gives some indication of the degree to which travel and tourism have affected the State. Thus, in 1901, the year of Federation, annual arrivals and departures together totalled 51,000; in 1913, 91,800; in 1931, 58,500; in 1939, 120,200 and in 1965, 499,000. The marked increase in "annual movements" since World War II is largely attributable to the growing use of air travel. Another factor has been industrial legislation providing for paid holidays (two weeks' leave was increased to three weeks by the Federal Arbitration Commission in 1963); this has not only increased the tourist inflow but also has resulted in more Tasmanians taking holidays in the continental States.

The quarterly figures show a marked seasonal pattern with arrivals at their maximum in the spring and summer quarters (those ending December and March). Net migration figures also show a seasonal pattern with substantial increments, approximating 10,000 persons, in the December quarter and substantial losses in the March quarter.

The data on arrivals and departures in the previous table are compiled simply on the basis of individual journeys and yield no classifications such as "permanent movement", "long-term movement" or "short-term movement", (these classifications are employed to describe arrivals and departures for the Commonwealth of Australia as a whole). It follows, therefore, that the percentage of "movements" involving Tasmanians, as opposed to visiting tourists, is at present unknown.

CENSUS OF 30th JUNE, 1961

Age Distribution

In addition to giving the number of the State's population, the Census of 30th June, 1961, provided a variety of data on characteristics of that population.

The table below shows the age distribution at 30th June, 1961 and the change since 1954:

Age Distribution of the Population at 30th June, 1961

Age Last Birthday (Years)	Males	Females	Persons			
			Total	Per Cent of Total	Intercensal Increase (a)	
					Number	Per Cent
0-4	21,350	20,344	41,694	11.90	4,673	12.62
5-9	19,714	19,001	38,715	11.05	4,832	14.26
10-14	18,750	18,140	36,890	10.53	10,342	38.96
15-19	14,110	13,646	27,756	7.92	5,825	26.56
20-24	11,857	11,264	23,121	6.60	1,955	9.24
25-29	11,005	10,142	21,147	6.04	2,412	10.24
30-34	12,173	11,104	23,277	6.64	493	2.07
35-39	12,431	11,685	24,116	6.88	2,463	11.37
40-44	11,036	10,761	21,797	6.22	1,104	5.33
45-49	10,948	10,115	21,063	6.01	3,690	21.23
50-54	9,332	8,499	17,831	5.09	3,051	20.64
55-59	7,381	6,767	14,148	4.04	2,343	19.85
60-64	5,697	6,080	11,777	3.36	558	4.97
65-69	4,364	5,427	9,791	2.80	579	6.30
70-74	3,483	4,385	7,868	2.25	1,236	18.65
75-79	2,267	2,844	5,111	1.46	1,050	25.86
80-84	1,118	1,617	2,735	0.78	541	24.66
85-89	482	656	1,138	0.32	190	20.04
90-94	104	204	308	0.09	50	19.38
95-99	25	26	51	0.02	7	15.91
100 and Over	1	5	6	..	4	200.00
Total	177,628	172,712	350,340	100.00	41,588	13.47
Under 21	76,383	73,429	149,812	42.76	26,439	21.43
21-64	89,401	84,119	173,520	49.53	11,492	7.09
65 and Over	11,844	15,164	27,008	7.71	3,657	15.66

(a) Increase since Census of 30th June, 1954.

Conjugal Condition

The next table shows the conjugal condition of the population at the Census of 1961 and at the previous Census of 1954:

Conjugal Condition of the Population

Conjugal Condition	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
Never Married—						
Under 15 years of age	97,452	31.56	59,814	57,485	117,299	33.48
15 years and over ..	54,890	17.78	33,939	24,100	58,039	16.57
Total	152,342	49.34	93,753	81,585	175,338	50.05
Married	136,248	44.13	76,861	76,153	153,014	43.68
Married but permanently separated	3,553	1.15	2,016	2,080	4,096	1.17
Widowed	14,030	4.54	3,817	11,746	15,563	4.44
Divorced	2,002	0.65	1,181	1,148	2,329	0.66
Not Stated	577	0.19	(a)	(a)	(a)	(a)
Grand Total ..	308,752	100.00	177,628	172,712	350,340	100.00

(a) In processing the 1961 Census data, a conjugal condition was allocated prior to tabulation in all instances where this information was not stated.

Birthplaces of the Population

The table that follows is of particular interest in view of the Commonwealth's post-war policy of actively encouraging migration from Europe. It shows birthplaces of the population at the Census of 1961 and at the previous Census of 1954:

Birthplaces of the Population

Birthplace	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
Australia	282,491	91.49	159,081	158,397	317,478	90.62
New Zealand	1,112	0.36	559	569	1,128	0.32
United Kingdom & Eire	14,113	4.57	8,776	7,965	16,741	4.78
Germany	1,794	0.58	1,300	923	2,223	0.63
Greece	150	0.05	345	144	489	0.14
Italy	974	0.32	1,043	493	1,536	0.44
Netherlands	2,340	0.76	1,903	1,653	3,556	1.02
Poland	1,594	0.52	1,108	500	1,608	0.46
Other European Countries	2,791	0.90	2,466	1,226	3,692	1.05
Total Europe ..	23,756	7.70	16,941	12,904	29,845	8.52
Other Birthplaces ..	1,393	0.45	1,047	842	1,889	0.54
Grand Total ..	308,752	100.00	177,628	172,712	350,340	100.00

The analysis of the birthplaces of the population at 30th June, 1961, can be viewed broadly as a measure of the degree to which migration from overseas has contributed to population growth over a long period.

The following table contrasts the position throughout the Commonwealth at 30th June, 1961.

Australia: Birthplaces of the Population, Census of 30th June, 1961
Proportion of Population of State or Territory According to Birthplace
(Per Cent)

Birthplace	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Australia ..	84.00	80.55	88.30	80.80	77.67	90.62	79.42	73.32	83.07
New Zealand ..	0.62	0.39	0.38	0.19	0.26	0.32	0.91	0.76	0.45
U.K. and Eire	6.87	7.05	6.15	8.13	11.32	4.78	7.65	9.62	7.19
Other European Countries ..	7.02	10.69	4.27	10.01	9.01	3.74	9.31	14.15	8.00
Other Birthplaces	1.49	1.32	0.90	0.87	1.74	0.54	2.71	2.15	1.29
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be observed that the Tasmanian pattern appears to vary quite significantly from that of other States and Territories, the most similar being that of Queensland. The following table shows particulars of the period of residence in Australia of persons born outside Australia, both for Tasmania and for the Commonwealth:

**Period of Residence in Australia of Persons Born Outside Australia
Census, 30th June, 1961**

Period of Residence (Years)	Tasmania		Australia	
	Persons		Persons	
	Total	Per Cent of Total	Total	Per Cent of Total
Born Outside Australia—				
Under 1	1,976	0.57	123,516	1.17
1 and under 2	1,768	0.50	86,981	0.83
2 and under 3	1,695	0.48	90,067	0.86
3 and under 4	1,656	0.48	78,993	0.74
4 and under 5	1,605	0.46	83,879	0.80
5 and under 6	1,755	0.50	96,167	0.92
6 and under 7	1,376	0.39	92,042	0.88
Under 7	11,831	3.38	651,645	6.20
7 and under 14	13,782	3.93	600,441	5.72
14 and under 21	1,075	0.31	40,290	0.38
21 and over	5,431	1.55	449,676	4.28
Not Stated	743	0.21	37,120	0.35
Total Born Outside Australia	32,862	9.38	1,779,172	16.93
Born in Australia	317,478	90.62	8,729,014	83.07
Grand Total	350,340	100.00	10,508,186	100.00

Of persons born outside Australia, those with residence of less than 14 years constitute a decisive majority, both in the Tasmanian and Australian populations, and this fact can be related to the Commonwealth's post-war migration policy since the 14 years in question cover the period 1947-1961.

The table shows that this policy has had considerably less effect on the Tasmanian population than on the population of Australia.

Nationality of Population

Comparable percentages of persons of British nationality at 30th June, 1961 were:—N.S.W., 95.48; Victoria, 92.97; Queensland, 97.73; S.A., 94.04; W.A., 95.40; Tasmania, 97.74; N.T., 92.97; A.C.T., 89.93; Australia, 95.01. It should be noted that the *Nationality and Citizenship Act* 1948 created, for the first time, the status of "Australian Citizen"; all Australian citizens, under the provisions of this Act, are declared to be British subjects. From the earlier table on birthplaces of the Tasmanian population, it is established that 95.72 per cent were born in Australia, N.Z., the United Kingdom or Eire. While birthplace does not necessarily determine nationality in all cases, comparison of the two tables suggests that the percentage of naturalised British subjects was probably less than 3 per cent of the State population at 30th June, 1961.

The following table shows the nationality of the Tasmanian population at 30th June, 1961 and also at 30th June, 1954:

Nationality (i.e. Allegiance) of the Population

Nationality	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
British (a)—						
Born in Australia ..	282,491	91.49	159,081	158,397	317,478	90.62
Born outside Australia	17,443	5.65	13,605	11,322	24,927	7.12
Total British ..	299,934	97.14	172,686	169,719	342,405	97.74
Foreign—						
Dutch	2,363	0.77	1,180	1,061	2,241	0.64
German	1,262	0.41	756	467	1,223	0.35
Greek	125	0.04	264	120	384	0.11
Italian	924	0.30	818	395	1,213	0.35
Polish	1,205	0.40	392	257	649	0.18
Yugoslavian	324	0.10	303	94	397	0.11
Other (incl. Stateless)	2,615	0.84	1,229	599	1,828	0.52
Total Foreign ..	8,818	2.86	4,942	2,993	7,935	2.26
Grand Total ..	308,752	100.00	177,628	172,712	350,340	100.00

(a) All persons of individual citizenship status who, by virtue of the *Nationality and Citizenship Act 1948*, are deemed to be British subjects. Includes naturalised British. For purposes of this table, Irish nationality is included with British.

Industry

The next table shows the main groups of industry for the population of Tasmania at 30th June, 1961, compared with 1954. For industry groups Finance and Property, Public Authority (n.e.i.) and Defence Services, and Community and Business Services (including Professional), the figures derived from the 1954 classification have been adjusted to the classification used in 1961.

Meaning of "Work Force"

Persons usually engaged in industry are regarded as being "in the work force", while the remainder of the population, which at the 1961 Census comprised 219,423 persons, is classified as not being in the work force. The term "in the work force" includes persons of all ages who are employees, employers, self-employed, unpaid helpers engaged in industry and those who usually work for a living but who have lost their jobs. Persons who do not earn their living by doing work for monetary reward, such as children, housewives, full-time students, retired persons, pensioners and inmates of institutions (excluding temporary inmates of hospitals and members of religious orders) are regarded as not being in the work force.

In the case of employees, the basis of classification is the industry of the employer; thus a carpenter employed by a mining company will appear under "Mining and Quarrying", not under "Building and Construction". Employees in the government sector (Commonwealth, State, Semi-Government and Local Government) are not recorded separately but are allocated to appropriate industry groupings, e.g. State railway workers to "Transport",

postal workers to "Communication", &c. Government employees not classified under any of the major industry groups in the following table appear under "Public Authority, n.e.i."

It should be emphasised that "work force" should not be confused with wage and salary earners since the term, by definition, includes not only employees but also employers, the self-employed and certain categories of the unemployed.

Industry of Population at 30th June, 1961

Industry Group	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Work Force			Total	Per Cent of Work Force
Primary Production ..	19,581	16.56	16,208	949	17,157	13.11
Mining and Quarrying..	3,671	3.11	3,538	93	3,631	2.77
Manufacturing	26,443	22.37	24,273	5,258	29,531	22.56
Electricity, Gas, Water and Sanitary Services (a)	2,766	2.34	2,982	183	3,165	2.42
Building and Construction	13,014	11.01	13,210	133	13,343	10.19
Transport and Storage..	8,334	7.05	8,626	388	9,014	6.89
Communication.. ..	2,860	2.42	2,763	882	3,645	2.78
Finance and Property ..	2,598	2.20	2,433	1,293	3,726	2.85
Commerce	16,400	13.87	13,562	6,985	20,547	15.69
Public Authority (n.e.i.) and Defence Services	4,487	3.80	3,856	1,154	5,010	3.83
Community and Business Services (including professional) (b) ..	9,779	8.28	5,337	7,686	13,023	9.95
Amusement, Hotels, Cafes, Personal Service, etc.	7,086	5.99	2,986	4,052	7,038	5.38
Other	1,189	1.00	1,515	572	2,087	1.58
Total in Work Force	118,208	100.00	101,289	29,628	130,917	100.00
Persons not in Work Force	190,544	..	76,339	143,084	219,423	..
Grand Total ..	308,752	..	177,628	172,712	350,340	..

(a) Production, supply and maintenance.

(b) Includes police, fire brigades, hospitals, medical and dental services, education, business services such as consultant engineering and surveying, accounting and auditing, industrial and trade associations, advertising, etc.

Occupational Status

The next table shows the occupational status of persons in the work force at the respective Census dates (30th June, 1954 and 1961):

Occupational Status at 30th June, 1961

Occupational Status	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Work Force			Total	Per Cent of Work Force
In Work Force—						
At Work—						
Employer ..	7,670	6.49	7,108	1,113	8,221	6.28
Self-Employed ..	13,933	11.79	11,619	1,572	13,191	10.08
Employee (a) ..	93,881	79.42	78,863	25,853	104,716	79.99
Helper (b) ..	1,018	0.86	505	194	699	0.53
Total at Work ..	116,502	98.56	98,095	28,732	126,827	96.88
Not at Work (c) ..	1,493	1.26	3,194	896	4,090	3.12
Not Stated ..	213	0.18	(d)	(d)	(d)	(d)
Total in Work Force	118,208	100.00	101,289	29,628	130,917	100.00
Not in Work Force ..	190,544	..	76,339	143,084	219,423	..
Grand Total ..	308,752	..	177,628	172,712	350,340	..

(a) On wage or salary.

(b) Not on wage or salary.

(c) Includes those who stated they were usually engaged in work, but were not actively seeking a job at the time of the Census by reason of sickness, accident, etc., or because they were on strike, changing jobs, or temporarily laid off, &c. It includes also persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the Census. The numbers shown as "Not at work", therefore, do not represent the number of unemployed available for work and unable to obtain it.

(d) In processing the 1961 Census data, an occupational status was allocated prior to tabulation in all instances where this information was not stated.

The Census classification "Not at Work" is not, by definition, intended as a measure of unemployment. The Department of Social Services reported the following receiving unemployment benefit in Tasmania near the respective Census dates (i.e. on the last Saturday of the month): June 1954, 109 persons; June 1961, 1,336 persons. The Department of Labour and National Service reported the following registered for employment in Tasmania near the Census dates: at 25th June, 1954, 555 persons; at 30th June, 1961, 3,213 persons. A definition of these registrations is: "Persons who claimed, when registering with the Commonwealth Employment Service, that they were not employed and who were recorded as unplaced. Includes those referred to employers and those who may have obtained employment without notifying the Employment Service. Includes also persons receiving unemployment benefit". Registration is voluntary but those seeking the payment of unemployment benefit are required to register. (For further details, see the "Employment" and "Unemployment" sections of Chapter 10.)

The Census term "Not at work" does not apply to persons who are only temporarily absent from their jobs through illness, accident, annual holidays, long-service leave, etc. The distinction between employees and helpers is that the former receive wages or salary while the latter do not, (e.g. "helpers" on the farm or in the family shop, not working for wages or salary).

The following table compares the proportions of the population in the work force of Tasmania and Australia at the respective Census dates (30th June, 1954 and 1961):

**Tasmania and Australia: Proportions of Population in Work Force
(Per Cent)**

Particulars	Census, 30th June, 1954			Census, 30th June, 1961		
	Males	Females	Persons	Males	Females	Persons
Total in Work Force—						
Tasmania	59.81	15.98	38.29	57.02	17.15	37.37
Australia	62.84	19.04	41.20	59.59	20.38	40.21

Religion

Commencing with the Census of 1933, the collection forms carried a note reminding the public that there was no legal obligation to answer the question on religion; the same reminder was given in subsequent censuses. A proportion of the population (8.97 per cent in 1954, 10.28 per cent in 1961) left the question on religion unanswered and appear in associated tables as "No Reply".

The table below analyses the Tasmanian population according to religion, as reported at the Censuses of 30th June, 1954 and 30th June, 1961. Over the seven-year intercensal period, there appears to have been little change in the proportion of adherents to the various religions:

Religions of the Population

Religion	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
Christian:—						
Baptist	6,293	2.04	3,547	3,680	7,227	2.06
Brethren	2,347	0.76	973	1,035	2,008	0.57
Catholic (a)	53,042	17.18	32,804	31,189	63,993	18.27
Churches of Christ	2,267	0.73	1,226	1,281	2,507	0.72
Church of England	147,407	47.74	79,982	79,119	159,101	45.41
Congregational	4,425	1.43	1,993	2,200	4,193	1.20
Greek Orthodox	593	0.19	647	362	1,009	0.29
Lutheran	1,046	0.34	849	706	1,555	0.44
Methodist	38,236	12.38	20,770	21,466	42,236	12.06
Presbyterian	15,607	5.06	8,350	8,407	16,757	4.78
Protestant (Undefined)	2,157	0.70	1,037	938	1,975	0.56
Salvation Army	1,815	0.59	1,114	1,202	2,316	0.66
Seventh Day Adventist	1,280	0.42	704	863	1,567	0.45
Other (including Christian Undefined)	2,972	0.96	2,483	2,607	5,090	1.45
Total Christian	279,487	90.52	156,479	155,055	311,534	88.92
Non Christian:—						
Hebrew	158	0.05	80	70	150	0.04
Other	98	0.03	86	32	118	0.04
Total Non-Christian	256	0.08	166	102	268	0.08
Indefinite	796	0.26	915	851	1,766	0.50
No Religion	516	0.17	529	246	775	0.22
No Reply	27,697	8.97	19,539	16,458	35,997	10.28
Grand Total	308,752	100.00	177,628	172,712	350,340	100.00

(a) Includes Catholic and Roman Catholic. (The Census forms do not list religions and adherents of the one religion may describe it under different titles.)

The apparent decline in the total proportion of the population adhering to Christian faiths should be weighed against the increase in the two categories, "Indefinite" and "No Reply", (i.e. a decline of 1.60 per cent against an increase of 1.55 per cent).

Population in Local Government Areas

The next table shows the population in cities, municipalities and statistical divisions at the Censuses of 1954 and 1961, together with the estimated distribution at 30th June, 1963 and 1964:

Population in Local Government Areas and Statistical Divisions

Local Government Area and Statistical Division	Population at 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Hobart (City)	54,887	54,021	53,746	53,719
Glenorchy (City)	25,810	35,682	37,471	37,972
Total S. Central Division ..	80,697	89,703	91,217	91,691
Launceston (City)	37,627	38,118	38,141	37,940
Total N. Central Division ..	37,627	38,118	38,141	37,940
Burnie	13,785	16,745	17,525	17,681
Circular Head	7,568	7,733	7,820	7,851
Deloraine	5,477	5,574	5,622	5,520
Devonport	11,827	14,276	14,979	15,462
Kentish	4,510	4,167	4,171	4,471
King Island	2,554	2,784	2,777	2,727
Latrobe	4,145	4,367	4,477	4,474
Penguin	3,889	4,673	4,769	4,819
Ulverstone	8,091	9,365	9,681	9,701
Wynyard	7,394	8,835	9,197	9,278
Total N.W. Division ..	69,240	78,519	81,018	81,984
Beaconsfield (a)	7,573	8,550	8,954	9,076
Fingal	4,418	4,475	4,448	4,385
Flinders	1,027	1,407	1,393	1,416
George Town	2,516	3,677	4,003	4,258
Lilydale (a)	4,583	6,744	7,331	7,620
Portland	1,412	1,274	1,221	1,254
Ringarooma	3,440	3,056	2,995	2,916
Scottsdale	3,189	3,417	3,501	3,450
Total N.E. Division ..	28,158	32,600	33,846	34,375
Evandale	1,676	1,608	1,672	1,586
Longford	4,345	6,762	7,132	6,932
St. Leonards (a)	7,095	11,032	12,044	12,618
Westbury (a)	3,974	4,581	4,748	4,813
Total N. Midland Division ..	17,090	23,983	25,596	25,949
Bothwell	1,260	1,288	1,270	1,210
Campbell Town	1,919	1,893	1,869	1,890
Hamilton	6,143	4,178	3,821	3,775
Oatlands	2,914	2,691	2,709	2,624
Ross	680	672	657	630
Total Midland Division ..	12,916	10,722	10,326	10,129

Population in Local Government Areas and Statistical Divisions—*continued*

Local Government Area and Statistical Division	Population at 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Brighton	2,570	2,115	2,038	2,040
Clarence (b)	12,604	23,140	26,862	28,100
Glamorgan	1,099	1,128	1,130	1,149
Green Ponds	949	969	973	941
Richmond	1,679	1,673	1,720	1,737
Sorell	2,391	2,878	3,068	3,168
Spring Bay	1,048	1,155	1,187	1,244
Total S.E. Division ..	22,340	33,058	36,978	38,379
Bruny	591	504	473	480
Esperance	3,200	3,436	3,601	3,678
Huon	5,615	5,460	5,440	5,394
Kingborough (b)	8,335	10,025	10,382	10,520
New Norfolk	9,429	10,217	10,360	10,340
Port Cygnet	2,861	2,754	2,684	2,663
Tasman	1,079	1,108	1,104	1,114
Total S. Division	31,110	33,504	34,044	34,189
Gormanston	523	507	513	474
Queenstown	4,497	4,624	4,615	4,570
Strahan	574	565	563	542
Waratah	514	367	373	352
Zeehan	2,816	3,191	3,210	3,192
Total W. Division	8,924	9,254	9,274	9,130
Migratory	650	879	880	800
Total Tasmania	308,752	350,340	361,320	364,566

(a) Includes suburban areas adjacent to City of Launceston.

(b) Includes suburban areas adjacent to City of Hobart.

Hobart and Suburbs

The City of Hobart is ringed by other local government areas which continue the pattern of urban development. For statistical purposes, this whole urban area is referred to as "Hobart and Suburbs"; it should be noted that "Hobart and Suburbs" is a combination of local government areas and parts of local government areas designed to define an homogeneous group and is not an area specified for any administrative purpose of local government.

"Hobart and Suburbs" is composed as follows: (i) City of Hobart; (ii) City of Glenorchy; (iii) part of Clarence Municipality (Derwent suburbs from Mount Direction to Howrah); (iv) part of Kingborough Municipality (Derwent suburbs from Taroona to Blackmans Bay).

The details of the suburban localities follow:

Suburbs of Hobart

Glenorchy (City)	Clarence (Part)	Kingborough (Part)
All (Extends parallel to Derwent River from New Town Creek to Granton)	Bellerive, Geilston Bay, Howrah, Lindisfarne, Risdon Vale, Warrane	Blackmans Bay, Kingston, Kingston Beach, Taroona

The next table shows the growth of "Hobart and Suburbs" since the Census of 30th June, 1954:

Population of Hobart and Suburbs

Local Government Area	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
City of Hobart	54,887	54,021	53,746	53,719
Municipality of Clarence (Part)	10,686	20,734	24,206	25,323
City of Glenorchy	25,810	35,682	37,471	37,972
Municipality of Kingborough (Part)	3,823	5,495	5,852	5,935
Total Hobart and Suburbs ..	95,206	115,932	121,275	122,949

The area defined as "Hobart and Suburbs" for the Census of 30th June, 1961 was increased by taking in Risdon Vale and Mount Direction in the Municipality of Clarence; these areas had been treated as "country" in the 1954 Census. The extension of the boundary hardly affects the comparability of the above figures since, at the Census of 1954, the Risdon Vale and Mount Direction areas were very thinly populated.

Population figures for the "fringe" municipalities, showing suburban and "country" components, are as follows:

Municipalities of Clarence and Kingborough: Suburban and Country Populations

Municipality	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Clarence — Suburban	10,686	20,734	24,206	25,323
Country	1,918	2,406	2,656	2,777
Total	12,604	23,140	26,862	28,100
Kingborough — Suburban	3,823	5,495	5,852	5,935
Country	4,512	4,530	4,530	4,585
Total	8,335	10,025	10,382	10,520

Launceston and Suburbs

The City of Launceston is ringed by other local government areas which continue the pattern of urban development. For statistical purposes, this whole urban area is referred to as "Launceston and Suburbs"; it should be noted that "Launceston and Suburbs" is a combination of local government areas and parts of local government areas designed to define an homogeneous group and is not an area specified for any administrative purpose of local government.

"Launceston and Suburbs" is composed as follows: (i) City of Launceston; (ii) part of Municipality of Beaconsfield (Tamar suburbs as far north as Cormiston; (iii) part of Municipality of Lilydale (Tamar suburbs, east bank); (iv) part of Municipality of St. Leonards (as far east as Waverley and St. Leonards township); (v) part of Municipality of Westbury (as far west as Prospect Vale).

Details of the suburban localities follow:

Suburbs of Launceston

Beaconsfield (Part)	Lilydale (Part)	St. Leonards (Part)	Westbury (Part)
Cormiston, Maraway- lee, Riverside, Trevallyn	Mayfield, Newnham, Rocherlea, Vermont	Elphin, Franklin Village, Norwood, Punchbowl, Ravens- wood, St. Leon- ards (town), Waver- ley, Young Town	Prospect, Prospect Vale

The next table shows the growth of "Launceston and Suburbs" since the Census of 30th June, 1954:

Population of Launceston and Suburbs

Local Government Area	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
City of Launceston.. ..	37,627	38,118	38,141	37,940
Municipality—Beaconsfield (Part)	2,629	3,162	3,339	3,361
Lilydale (Part) ..	2,392	4,462	4,936	5,225
St. Leonards (Part)	6,302	10,222	11,218	11,792
Westbury (Part) ..	353	757	807	872
Total Launceston and Suburbs	49,303	56,721	58,441	59,190

The area defined as "Launceston and Suburbs" remained the same for the Censuses of 1954 and 1961.

Population figures for the "fringe" municipalities, showing suburban and country components, are as follows:

Municipalities Containing Launceston Suburbs: Suburban and Country Populations

Municipality	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Beaconsfield — Suburban ..	2,629	3,162	3,339	3,361
Country	4,944	5,388	5,615	5,715
Total	7,573	8,550	8,954	9,076
Lilydale — Suburban ..	2,392	4,462	4,936	5,225
Country	2,191	2,282	2,395	2,395
Total	4,583	6,744	7,331	7,620
St. Leonards — Suburban ..	6,302	10,222	11,218	11,792
Country	793	810	826	826
Total	7,095	11,032	12,044	12,618
Westbury — Suburban ..	353	757	807	872
Country	3,621	3,824	3,941	3,941
Total	3,974	4,581	4,748	4,813

Urban and Rural

The following table analyses the growth of population since the 1954 Census in broad areas:

Population in Urban and Rural Areas

Area	Census, 30.6.54		Census, 30.6.61		Estimated, 30.6.64	
	Persons	Per Cent of Total	Persons	Per Cent of Total	Persons	Per Cent of Total
Hobart and Suburbs ..	95,206	30.84	115,932	33.09	122,949	33.72
Other Urban—						
Launceston and Suburbs	49,303	15.97	56,721	16.19	59,190	16.24
Other (a)	58,825	19.05	73,882	21.09	(b)	(b)
Total	108,128	35.02	130,603	37.28	(b)	(b)
Rural	104,768	33.93	102,926	29.38	(b)	(b)
Migratory	650	0.21	879	0.25	800	0.22
Total Tasmania ..	308,752	100.00	350,340	100.00	364,566	100.00

(a) Non-municipal towns with population exceeding 750 persons.

(b) Not available separately.

The next table compares the average annual rate of growth per cent in the two main urban centres:

Average Annual Rate of Growth in Hobart and Suburbs, Launceston and Suburbs and Remainder of State

Area	Average Annual Rate of Growth Per Cent (a)		
	Seven Years 30.6.54 to 30.6.61	Ten Years 30.6.54 to 30.6.64	Three Years 30.6.61 to 30.6.64
Hobart and Suburbs ..	2.85	2.62	1.99
Launceston and Suburbs ..	2.02	1.87	1.44
Remainder of State ..	1.12	1.06	0.98
Total Tasmania ..	1.82	1.67	1.32

(a) Compound rate of increase.

Urban and Rural Distribution

Particulars of the distribution of the population between urban and rural areas are available only from a census.

Urban areas in Tasmania are defined as follows: (i) Hobart and Suburbs; (ii) Launceston and Suburbs; (iii) non-municipal towns with population exceeding 750 persons. Only three local government areas are classified, in total, as urban, specifically the Cities of Hobart, Glenorchy and Launceston. The remaining 46 local government areas are dealt with as follows: (i) in the case of a municipality not having any town exceeding the limit of 750 persons, the whole population is classified as "rural"; (ii) in the case of a municipality having towns with populations exceeding 750 persons, the town population is classified as urban and the balance as rural; (iii) in the case of a "fringe"

municipality bordering Hobart or Launceston, population within the respective suburban boundaries is classified as urban; the balance of the municipality is then allocated to rural or urban by the criterion just described.

The next table compares the proportions of urban and rural population of the Australian States at the Census of 30th June, 1961. (In the table, Hobart and Suburbs appears as 'Metropolitan' and Launceston and Suburbs is included with 'Other Urban'.)

**Proportion of Urban and Rural Population, Australian States and Territories
Census, 30th June, 1961**

(Per Cent)

Classification	Proportion of Total Population of State								
	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Urban—									
Metropolitan	55.74	65.25	40.92	60.66	57.03	33.09	..	95.96	56.12
Other (a) ..	29.41	19.59	35.35	18.30	17.07	37.28	62.65	..	25.82
Rural ..	14.58	15.00	23.60	20.64	25.49	29.38	36.38	4.04	17.82
Migratory ..	0.27	0.16	0.13	0.40	0.41	0.25	0.97	..	0.24
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) In all States except Tasmania, non-municipal towns included are those with populations of 1,000 persons or more; in Tasmania, those with populations of 750 or more.

Decentralisation of Population

It will be observed that Tasmania differs very significantly from the five continental States in three respects: (i) lowest proportion in the metropolitan area; (ii) highest proportion classified as "other urban"; (iii) highest proportion classified as "rural". The Tasmanian distribution is unique in one respect—none of the continental States has a non-metropolitan urban centre with a population approaching 50 per cent of that in the metropolitan area; this is the Tasmanian situation, however, such a centre being Launceston and Suburbs (included in "other urban" in the above table). This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of towns along the north west coast; the chief of these, Burnie and Devonport, together contain 8 per cent of the State's population. The Tasmanian distribution is of particular interest since, in the continental States, decentralisation is currently being urged as a policy necessary to check the excessive concentration of population in metropolitan areas. Growth of population in Tasmania since the 1954 Census has been concentrated, to a large degree, in the metropolitan area (nearly 50 per cent of the intercensal increase in State population from 1954 to 1961 was recorded in Hobart and Suburbs); if this trend continues, then Tasmania will lose advantages attributable to its present state of relative decentralisation.

"Urban" and "Rural" in Local Government Areas

The following table shows the distribution of the Tasmanian population in local government areas, statistical divisions and in urban and rural areas at the 1961 Census:

**Population in Local Government Areas Classified as Metropolitan,
Other Urban and Rural: Census, 30th June, 1961**

Local Government Area and Statistical Division	Total Population	Population Classified As:			Non-Municipal Towns with Populations Classed as "Other Urban"
		Metro-politan	Other Urban	Rural	
Hobart (City) ..	54,021	54,021	..	..
Glenorchy (City) ..	35,682	35,682	..	..
Total S. Central Div.	89,703	89,703	..	..
Launceston (City) ..	38,118	..	38,118	..	
Total N. Central Div.	38,118	..	38,118	..	
Burnie	16,745	..	14,201	2,544	Burnie (N.M.)
Circular Head ..	7,733	..	{ 2,671	4,244	Smithton (N.M.)
Deloraine	5,574	..	818	3,643	Stanley (N.M.)
Devonport	14,276	..	1,931	1,208	Deloraine (N.M.)
Kentish	4,167	..	13,068	3,266	Devonport (N.M.)
King Island	2,784	..	901	2,784	Railton (N.M.)
Latrobe	4,367	..	..	2,241	..
Penguin	4,673	..	2,126	2,588	Latrobe (N.M.)
Ulverstone	9,365	..	2,085	3,403	Penguin (N.M.)
Wynyard	8,835	..	5,962	3,931	Ulverstone (N.M.)
			{ 1,783		Somerset (N.M.)
			3,121		Wynyard (N.M.)
Total N.W. Div. ..	78,519	..	48,667	29,852	..
Beaconsfield	8,550	..	{ 997	4,391	Beaconsfield (N.M.)
Fingal	4,475	..	(a) 3,162	3,650	Rossarden (N.M.)
Flinders	1,407	..	825	1,407	..
George Town	3,677	..	..	857	George Town (N.M.)
Lilydale	6,744	..	2,820	2,282	..
Portland	1,274	..	(a) 4,462	1,274	..
Ringarooma	3,056	..	..	3,056	..
Scottsdale	3,417	..	1,628	1,789	Scottsdale (N.M.)
Total N.E. Div. ..	32,600	..	13,894	18,706	
Evandale	1,608	..	..	1,608	
Longford	6,762	..	1,767	4,995	Longford (N.M.)
St. Leonards	11,032	..	(a) 10,222	810	
Westbury	4,581	..	{ 1,068	2,756	Westbury (N.M.)
			(a) 757		
Total N. Midland Div.	23,983	..	13,814	10,169	
Bothwell	1,288	..	..	1,288	
Campbell Town ..	1,893	..	1,040	853	Campbell Town (N.M.)
Hamilton	4,178	..	..	4,178	
Oatlands	2,691	..	..	2,691	
Ross	672	..	..	672	
Total Midland Div.	10,722	..	1,040	9,682	
Brighton	2,115	..	..	2,115	
Clarence	23,140	(b) 20,734	..	2,406	
Glamorgan	1,128	..	..	1,128	
Green Ponds	969	..	..	969	
Richmond	1,673	..	..	1,673	
Sorell	2,878	..	..	2,878	
Spring Bay	1,155	..	..	1,155	
Total S.E. Div. ..	33,058	20,734	..	12,324	

**Population in Local Government Areas Classified as Metropolitan,
Other Urban and Rural: Census, 30th June, 1961—continued**

Local Government Area and Statistical Division	Total Population	Population Classified As:			Non-Municipal Towns with Populations Classed as "Other Urban"
		Metro- politan	Other Urban	Rural	
Bruny	504	..	..	504	Huonville-Ranelagh (N.M.) New Norfolk (N.M.) Cygnet (N.M.)
Esperance	3,436	..	..	3,436	
Huon	5,460	..	1,491	3,969	
Kingborough	10,025	(b) 5,495	..	4,530	
New Norfolk	10,217	..	5,445	4,772	
Port Cygnet	2,754	..	830	1,924	
Tasman	1,108	..	..	1,108	
Total S. Div. ..	33,504	5,495	7,766	20,243	
Gormanston	507	..	..	507	Queenstown (N.M.)
Queenstown	4,624	..	4,601	23	
Strahan	565	..	..	565	
Waratah	367	..	..	367	
Zeehan	3,191	..	{ 1,923 780	488	Rosebery (N.M.) Zeehan (N.M.)
Total W. Div. ..	9,254	..	7,304	1,950	
Migratory	879	..	..	..
Total Tasmania ..	350,340	115,932	130,603	102,926	

(a) Component of "Launceston and Suburbs".

(b) Component of "Hobart and Suburbs".

City of Glenorchy

In the preceding tables, Glenorchy has been shown as a city; it acquired city status on 24th October, 1964, and was a municipality at the Census of 30th June, 1961. As there were no boundary changes, it follows that statistical series for the previous Municipality of Glenorchy are continuous, without any break in comparability, with series for the City of Glenorchy.

Populations of Australian Capital Cities

The populations of Australian capital cities at each Census, 1901 to 1961, are shown in the following table:

Australia: Populations of Capital Cities at Census Dates

Metropolitan Area (a)	1901	1911	1921	1933	1947	1954	1961
Sydney ('000)	482	630	899	1,235	1,484	1,863	2,183
Melbourne .. (")	496	593	783	992	1,226	1,524	1,912
Brisbane .. (")	119	139	210	300	402	502	622
Adelaide .. (")	162	190	256	313	382	484	588
Perth (")	67	107	155	208	273	349	420
Hobart (")	35	40	52	60	77	95	116
Canberra .. ( " )	..	..	..	7	15	28	56
Total—Persons ('000)	1,361	1,699	2,355	3,115	3,859	4,845	5,897
Percentage (b)	36	38	43	47	51	54	56

(a) Some of the apparent increase in the percentage of total population living in capital cities is due to periodic revision and extension of metropolitan boundaries.

(b) Percentage of total Australian population.

The Tasmanian metropolitan population has grown over the sixty years 1901-1961 at an average annual rate of two per cent; the corresponding rate for the Australian metropolitan population approaches 2.5 per cent.

VITAL STATISTICS

Historical

In 1839, John Montagu, Colonial Secretary of Van Diemen's Land, submitted to the Governor, Sir John Franklin, a series of statistical returns; below is shown part of Return No. 17:

Vital Statistics of Van Diemen's Land

Year	Births	Deaths	Marriages
1824	177	132	75
1828	309	250	120
1829	301	260	166
1830	460	270	163

The complete table covers the period 1824-1838 but entries for 1825, 1826, 1827 and 1832 read "No Returns". In a commentary for the Governor's guidance, Montagu wrote: "I would also observe that the number of births and deaths are those only returned by ministers of the Church of England, and the former column refers to those only who have been christened; and although the number of deaths must be near the truth, yet the actual number of births has been very much under-stated". Thus, even though the Tasmanian record of births, deaths and marriages covers a period of 140 years, these early figures cannot be accepted as being very reliable.

Registration Provisions

Franklin's Legislative Council had passed in 1838 "*An Act for Registering Births, Deaths and Marriages in the Island of Van Diemen's Land and its Dependencies*." This provided for the establishment of a central register in Hobart Town; the division of the colony into registration districts; the appointment of a Registrar in Hobart and of Deputy Registrars in the districts; the recording of births and deaths by the Deputy Registrars, and finally the reporting of these events to the Registrar by the Deputies. The ministers celebrating marriages were required to make returns direct to the Registrar but Deputy Registrars could also officiate and had certain licensing functions. With the establishment of such machinery, the recording of births, deaths and marriages could be expected to improve but as late as 1867, the Government Statistician complained that Section 22 of the 1838 Act was an impediment to compiling accurate death rates. Section 22 reads: "And be it enacted that nothing contained in this Act shall extend or apply to the registration of the death of any prisoner of the Crown serving under an unexpired sentence of transportation in the island or its Dependencies whether the same shall have been partially remitted or not." E. C. Nowell, the Statistician, had this to say: "This is a very inconvenient provision, and I would submit that it should be repealed as being at variance with the practice in other countries, and opposed to the interests of Science." However, in 1868, he reported that the death rate could be accepted as correct since "only one transported offender died during the year." This would certainly suggest that deaths recorded by successive Registrars in the period 1839-1866 were not total deaths for the island.

Some difficulties in maintaining the central registration of marriages may account for an 1842 amendment specifying \$50 penalties for ministers of religion who failed to make returns as required by the Act.

The registration function has been merged at times with those of other offices. Thus, from 1857 to 1882, the Registrar of the Supreme Court was also Registrar of Births, Deaths and Marriages; from 1882 to 1919, the Government Statistician was the Registrar; as from 1919, the Registrar-General's Department operated as a separate entity.

The Registrar General

The principal Act under which the Registrar General operates is the *Registration of Births and Deaths Act* 1895 as amended which provides for district Registrars and the appointment of a Registrar General to be responsible for the maintenance of central registers; in essence, the regional approach of the 1838 Act is retained. The functions of the Registrar General in relation to the registration of marriages were last defined in the *Marriage Act* 1942. However, in 1961, the Commonwealth Parliament passed the *Marriage Act* 1961. A few minor provisions (relating mainly to certain extensions of the application of the prohibited degrees) came into operation on the date the Act received the Royal Assent (6th May, 1961) and the remainder of the Act came into operation on 1st September, 1963. On this date, the Act superseded the marriage laws of all the States but did not affect the essential function of the Registrar General in the central registration of marriages. (The Commonwealth's passage of a uniform marriage law for Australia was the sequel to negotiations with all States.)

At the office of the Registrar General, there is kept for reference a collection of all registrations made since 1839, as well as church records relating to earlier periods.

Summary of Principal Statistics

The principal numbers and rates relating to vital statistics in Tasmania for recent years are given in the following table:

Summary of Vital Statistics

Year	Number of—				Rate per 1,000 of Mean Population			Infant Mortality
	Marriages	Live Births	Deaths	Infant Deaths (a)	Marriages	Live Births	Deaths	Deaths Under One Year per 1,000 Live Births
1954	2,512	7,770	2,696	186	8.08	24.98	8.67	23.9
1955	2,600	8,089	2,489	189	8.24	25.63	7.89	23.4
1956	2,601	8,104	2,513	170	8.10	25.24	7.83	21.0
1957	2,507	8,435	2,670	170	7.63	25.68	8.13	20.2
1958	2,475	8,568	2,708	167	7.38	25.55	8.07	19.5
1959	2,567	8,625	2,780	202	7.52	25.26	8.14	23.4
1960	2,713	8,853	2,670	169	7.82	25.52	7.70	19.1
1961	2,677	8,982	2,789	151	7.57	25.40	7.89	16.8
1962	2,485	8,894	2,870	184	6.91	24.75	7.99	20.7
1963	2,579	8,530	2,818	153	7.08	23.42	7.74	17.9
1964	2,869	8,252	3,174	166	7.81	22.46	8.64	20.1
1965	2,888	7,535	3,043	125	7.82	20.40	8.24	16.6

(a) Deaths under one year; included also in total deaths.

"Crude Rate" Comparisons

The rates per 1,000 of mean population for births, deaths and marriages are referred to as *crude* rates. It will be seen, in regard to marriages, that not *all* the population is "at risk", children and those already married being obvious excluded examples. Similarly, births are clearly events related to certain fertile age groups of women and not to the total population; births also are directly related to the number of married persons and to the age structure of the married proportion of the community. Finally, deaths have a definite relationship with the numbers of each sex and the age structure of the community.

To illustrate, a community experiencing a new trend involving loss of population by migration in the age group 20-35 years, all things being equal, might be expected to show a decline in the crude marriage and birth rates and an increase in the crude death rate. These variations in crude rates would occur despite the fact that there had been no change in the propensity to marry at specific ages, no change in fertility in specific age groups and no change in life expectancy. It follows that comparisons over time in terms of crude rates may be meaningful in the short term but invalid for longer periods when the age structure and the proportion of married persons may have undergone significant changes.

Subject to these limitations, the following historical comparisons exist as from 1880:

1. Crude Marriage Rate: highest 10.51 (1946); lowest 5.50 (1895 and 1896).
2. Crude Birth Rate: highest 36.63 (1884); lowest 19.39 (1935).
3. Crude Death Rate: highest 17.41 (1883); lowest 7.70 (1960).

It is probably significant that 1946 was the year of rapid demobilisation after World War II and that a similar marriage trend was recorded for 1919 and 1920 after World War I; as to the minima for marriage and birth rates, the 1890's and 1930's were decades characterised by severe economic depression.

Review of Infant Mortality

Infant mortality relates to the number of deaths *under one year* and the rate is expressed as the number of such deaths per 1,000 live births. It follows that comparisons over long periods of time are valid and not affected by the limitations attached to crude rates. In the record of infant mortality, the drop in rates has been dramatic:

Infant Mortality Rate, Selected Years, from 1880

Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births
1880 ..	112.3	1920 ..	65.5	1960 ..	19.1
1890 ..	105.6	1930 ..	50.6	1963 ..	17.9
1900 ..	80.0	1940 ..	35.2	1964 ..	20.1
1910 ..	101.7	1950 ..	23.8	1965 ..	16.6

The peak year since 1880 was 1883 with a rate of 124.0. In the period 1880-1910, the annual infant mortality rate exceeded 100 on 14 occasions. By way of contrast, the rate in 1965 reached a record minimum of 16.6.

At the turn of the century, 20 to 25 per cent of all deaths were those of infants under one year. It is apparent that the rapid fall in infant mortality rates will have markedly affected crude death rates, infant deaths being a

component of total deaths. Infant mortality rates are used by some authorities as an index of the degree of civilisation attained by a community; by such standards, Tasmania, in common with other Australian States, ranks extremely high, in comparison with other countries of the world.

Marriages

The following table summarises the number of marriages and the crude marriage rate since 1880:

Marriages and Crude Marriage Rates, Selected Years from 1880

Year	Marriages		Year	Marriages	
	Number	Crude Rates (a)		Number	Crude Rates (a)
1880 ..	840	7.39	1940 ..	2,476	10.27
1890 ..	954	6.66	1950 ..	2,422	9.18
1900 ..	1,332	7.72	1960 ..	2,713	7.82
1910 ..	1,493	7.82	1963 ..	2,579	7.08
1920 ..	1,999	9.50	1964 ..	2,869	7.81
1930 ..	1,450	6.56	1965 ..	2,888	7.82

(a) Number of marriages per 1,000 of mean population.

A feature of recent years has been the increase in the proportion of marriages which involve minors. This trend, dating from the end of World War II, still continues as shown in the following table:

Marriages of Minors

Year	Age in Years							Total	
	14	15	16	17	18	19	20	Number	Percentage of Total Marriages (a)

Bridegrooms

1959 ..	..	..	..	12	56	98	165	331	12.89
1960 ..	..	..	1	13	66	118	203	401	14.78
1961 ..	..	..	3	5	66	132	198	404	15.09
1962 ..	..	..	1	10	58	120	195	384	15.45
1963 ..	..	..	2	18	71	118	228	437	16.94
1964 ..	..	..	..	8	79	142	254	483	16.84

Brides

1959 ..	..	1	7	80	179	264	321	355	1,207	47.02
1960 ..	..	2	12	94	209	283	347	344	1,291	47.59
1961 ..	..	..	8	93	185	290	359	331	1,266	47.29
1962 ..	..	1	14	79	192	286	329	318	1,219	49.06
1963 ..	..	2	12	94	193	296	361	311	1,269	49.20
1964 ..	..	..	1	118	237	314	382	370	1,422	49.56

(a) i.e. percentage of all marriages, including those involving adults.

The next table analyses the ages of all bridegrooms and brides contracting marriages in 1964:

Age of Bridegrooms and Brides, 1964

Age (Years)	Bridegrooms		Brides	
	Number	Per Cent of Total	Number	Per Cent of Total
Under 20	229	7.99	1,052	36.67
20-24	1,492	52.00	1,237	43.12
25-29	592	20.63	244	8.50
30-34	192	6.69	75	2.61
35-39	103	3.59	57	1.99
40-44	71	2.48	56	1.95
45-49	47	1.64	40	1.39
50-54	34	1.19	36	1.25
55-59	48	1.67	26	0.91
60-64	21	0.73	18	0.63
65 and Over	40	1.39	28	0.98
Total	2,869	100.00	2,869	100.00

The prevailing trend towards earlier marriage still continues as shown in the table below, the indicator being the average age of bridegrooms and brides:

Average Age of Bridegrooms and Brides
(Years)

Particulars	1959	1960	1961	1962	1963	1964
Average Age of Bridegrooms—						
Bachelors	25.00	24.96	24.65	24.74	24.23	24.25
Widowers	54.76	56.06	54.58	55.12	56.63	57.44
Divorcees	39.81	40.25	40.06	40.07	41.43	42.02
All Bridegrooms	27.04	27.17	26.79	26.89	26.48	26.64
Average Age of Brides—						
Spinsters	21.53	21.22	21.48	21.22	21.16	21.09
Widows	47.46	49.33	45.64	49.86	49.25	51.39
Divorcees	35.08	35.99	35.52	37.47	36.97	38.14
All Brides	23.42	23.36	23.37	23.41	23.10	23.30

In the next table, the conjugal condition of persons marrying is shown for a six-year period:

Conjugal Condition of Persons Marrying

Year	Bridegrooms			Brides			Total Marriages
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	
1959 ..	2,308	95	164	2,304	104	159	2,567
1960 ..	2,444	111	158	2,428	120	165	2,713
1961 ..	2,403	100	174	2,406	119	152	2,677
1962 ..	2,225	91	169	2,221	93	171	2,485
1963 ..	2,334	100	145	2,332	89	158	2,579
1964 ..	2,581	112	176	2,592	122	155	2,869

Over the last ten years, the months in which marriages most frequently occur are April, followed by December and January in that order; July appears

to be the least popular. The numbers of marriages performed according to the rites of the principal religious denominations and of civil marriages contracted before Registrars are shown below for recent years:

Marriages, Religious and Civil

Particulars of Celebration	1959	1960	1961	1962	1963	1964
Religious Rites—						
Church of England	923	975	974	855	934	1,108
Catholic	522	564	567	522	518	605
Presbyterian	133	138	152	125	113	138
Methodist	388	439	406	367	398	377
Congregational	40	36	31	43	46	31
Baptist	66	61	76	64	85	75
Church of Christ	25	22	23	16	23	25
Salvation Army	26	27	25	19	20	21
Seventh Day Adventist	6	4	10	3	5	6
Other	42	52	51	60	74	71
Civil Ceremonies (a)	396	395	362	411	363	412
Total	2,567	2,713	2,677	2,485	2,579	2,869

(a) Marriages contracted before Registrars.

Divorce

Divorce in Tasmania was previously provided for under the *Matrimonial Causes Act* 1860 as amended in 1864, 1874 and 1959. However, as from 1st February, 1961, Australia came under uniform divorce law, the new *Matrimonial Causes Act* 1959 of the Commonwealth Parliament having come into effect on that date. (Like the uniform marriage law, the Commonwealth legislation relating to divorce was the sequel to negotiations with the States.)

In 1964, dissolutions of marriage exceeded eight per cent of the number of marriages contracted for that year (230 dissolutions against 2,869 marriages). The increase in the number of annual dissolutions is summarised in the historical table which follows.

Dissolutions of Marriage (a) Granted, Summary from 1881

Decade Ending—	Maximum in Decade		Minimum in Decade	
	Year	Number	Year	Number
1890	1886	6	1884	..
1900	1894	6	1896	3
1910	1909	13	1904	2
1920	1920	18	1916	2
1930	1928	55	1924	20
1940	1938	109	1937	30
1950	1949	266	1942	83
1960	1954	233	1958	176

(a) Includes nullities of marriage and judicial separations.

The following table gives the number of petitions filed by husbands and wives respectively, and the number of dissolutions of marriage during the last six years. Every decree of dissolution of marriage is, in the first instance, a decree nisi and is not made absolute till the expiration of not less than three months thereafter.

Petitions Filed and Dissolutions Granted

Particulars	1959	1960	1961	1962	1963	1964
Petitions for Dissolution (a) Filed						
By—						
Husband	123	136	154	127	126	149
Wife	160	138	168	153	147	175
Total Petitions	283	274	322	280	273	324
Dissolutions (a) Granted on Petition of—						
Husband	100	93	124	125	108	116
Wife	122	117	162	124	153	114
Total Dissolutions ..	222	210	286	249	261	230

(a) Includes nullities of marriage and judicial separations.

The next table deals with petitions filed in 1964:

Petitions Filed, 1964

Petition For—	Petitioner		Total
	Husband	Wife	
Dissolution	149	173	322
Nullity .. .. .	..	..	..
Judicial Separation .. ..	..	2	2
Total	149	175	324

The table that follows analyses the grounds on which dissolutions were granted during 1964:

Dissolutions Granted According to Grounds, 1964

Grounds	Petitioner		Total
	Husband	Wife	
DISSOLUTION OF MARRIAGE			
Single Ground—			
Desertion	48	47	95
Adultery	37	17	54
Separation (a)	20	25	45
Cruelty .. ..	..	9	9
Drunkenness .. ..	..	6	6
Dual Grounds—			
Desertion and Adultery	5	2	7
Desertion and Separation	4	4	8
Cruelty and Drunkenness	1	2	3
Three Grounds or More	2	2
Total	115	114	229

NULLITY

Pregnant at time of marriage	1	..	1
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(a) Separation became a ground for dissolution under the Commonwealth Matrimonial Causes Act, 1959.

Below is given a summary of the more frequent grounds for the granting of dissolutions:

Dissolutions (a) Granted According to More Frequent Grounds

Grounds	1959	1960	1961	1962	1963	1964
On Petition of Husband—						
Adultery	52	49	47	42	32	37
Desertion	48	44	63	60	46	48
Separation (b) .. .. .	..	..	13	18	23	20
Other .. .. .	..	..	1	5	7	11
On Petition of Wife—						
Adultery	30	20	34	14	27	17
Desertion	87	91	102	54	66	47
Separation (b) .. .. .	..	..	18	41	40	25
Other	5	6	8	15	20	25
Total	222	210	286	249	261	230

(a) Includes nullities and judicial separations.

(b) Separation became a ground for dissolution under the Commonwealth Matrimonial Causes Act, 1959.

In the following table, an analysis is made of the ages of the parties concerned in the dissolutions of marriage during 1964:

Dissolutions of Marriage, 1964—Ages of Parties at Time of Dissolution

Age of Husband (Years)	Age of Wife (Years)						Total Husbands
	Under 21	21-29	30-39	40-49	50-59	60 and over	
Under 21 .. .. .	..	..	..	..	..	..	..
21-29	4	39	1	..	..	..	44
30-39	7	40	34	3	..	..	84
40-49 .. .. .	..	4	24	31	1	..	60
50-59 .. .. .	..	..	1	15	12	..	28
60 and over .. .. .	..	..	..	1	8	5	14
Total Wives ..	11	83	60	50	21	5	230

In the next table, particulars are given of the duration of marriage and issue in respect of dissolutions of marriage during 1964:

Dissolutions of Marriage, 1964—Duration of Marriage and Issue

Duration of Marriage (Years)	Dissolutions of Marriages with—						Total Marriages Dissolved	Total Number of Children (a)
	No Children	1 Child	2 Children	3 Children	4 Children	5 or more Children		
0-4 ..	13	14	3	..	..	..	30	20
5-9 ..	21	13	19	3	1	1	58	69
10-14 ..	9	10	18	7	4	3	51	99
15-19 ..	5	6	4	6	5	3	29	70
20-24 ..	4	9	9	5	2	2	31	64
25-29 ..	7	..	4	1	..	..	12	11
30-34 ..	10	2	1	..	..	..	13	4
35-39 ..	1	..	1	..	..	..	2	2
40-44 ..	3	1	..	..	..	..	4	1
45 and over	..	..	..	..	..	..	..	..
Total Dissolutions	73	55	59	22	12	9	230	..
Total Children (a)	..	55	118	66	48	53	..	340

(a) Under 21 years of age.

Petitions and Dissolutions, 1965

In 1965, 331 petitions were filed for dissolution of marriage, (including 3 for declarations of nullity). In the same year, 279 dissolutions of marriage were granted, not including one judicial separation.

Births

The following table summarises births and crude birth rates from 1880:

Number of Births and Crude Birth Rates, Selected Years from 1880

Year	Births		Year	Births	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	3,739	32.90	1930 ..	4,785	21.66
1885 ..	4,637	36.29	1935 ..	4,456	19.39
1890 ..	4,813	33.60	1940 ..	4,994	20.71
1895 ..	4,790	31.16	1945 ..	5,785	23.27
1900 ..	4,864	28.18	1950 ..	7,242	25.96
1905 ..	5,257	28.50	1955 ..	8,089	25.63
1910 ..	5,586	29.25	1960 ..	8,853	25.52
1915 ..	5,845	29.78	1963 ..	8,530	23.42
1920 ..	5,740	27.29	1964 ..	8,252	22.46
1925 ..	5,218	24.21	1965 ..	7,535	20.40

The next table shows, for a six-year period, the number of births and the age-groups of the mothers:

Number of Births Classified According to Age of Mother, and Crude Birth Rates

Age Group of Mothers (Years)	1959	1960	1961	1962	1963	1964
10-14	3	6	3	8	5	2
15-19	829	894	957	988	1,001	1,073
20-24	2,801	2,925	2,949	2,997	2,869	2,834
25-29	2,329	2,378	2,383	2,371	2,302	2,190
30-34	1,484	1,540	1,536	1,471	1,368	1,196
35-39	922	856	879	772	717	704
40-44	242	234	254	264	255	231
45 and over ..	15	20	21	23	13	22
Total	8,625	8,853	8,982	8,894	8,530	8,252
Crude Birth Rate (a)	25.26	25.52	25.40	24.75	23.42	22.46

(a) Births per 1,000 of mean population.

One common observation is that births of males, in total, usually exceed those of females. The next table shows births by sex and indicates masculinity:

Births by Sex and Masculinity

Particulars	1959	1960	1961	1962	1963	1964
Births of—						
Males ..	4,423	4,483	4,635	4,629	4,428	4,218
Females ..	4,202	4,370	4,347	4,265	4,102	4,034
Total	8,625	8,853	8,982	8,894	8,530	8,252
Masculinity (a) ..	105.26	102.59	106.63	108.53	107.95	104.56

(a) Number of male births per 100 female births.

In the following table, births are analysed by sex and by the age of the mother and classified as nuptial or ex-nuptial:

Births by Sex, Age of Mother and Nuptial State, 1964

Age Group of Mothers (Years)	Nuptial				Ex-Nuptial		All Births		
	First Born (a)		Subsequent Birth		Male	Female	Male	Female	Total
	Male	Female	Male	Female					
10-14 ..	..	..	..	..	..	2	..	2	2
15-19 ..	336	293	101	111	125	107	562	511	1,073
20-24 ..	532	562	860	753	57	70	1,449	1,385	2,834
25-29 ..	198	182	897	853	32	28	1,127	1,063	2,190
30-34 ..	59	57	519	526	19	16	597	599	1,196
35-39 ..	28	35	320	291	10	20	358	346	704
40-44 ..	4	9	106	98	3	11	113	118	231
45 and over ..	..	1	11	8	1	1	12	10	22
Total ..	1,157	1,139	2,814	2,640	247	255	4,218	4,034	8,252

(a) In case of plural births with no previous issue, first child born alive is recorded as "First Born" and subsequent child or children as "Subsequent Birth".

The table that follows summarises, for a six-year period, births according to whether the child was first-born or the issue of a subsequent birth:

Births of First Born and Subsequent Births; Nuptial State of Mothers

Classification of Births	1959	1960	1961	1962	1963	1964
Nuptial—						
First Born ..	2,310	2,297	2,398	2,350	2,324	2,296
Subsequent Birth ..	5,927	6,123	6,180	6,072	5,742	5,454
Ex-Nuptial ..	388	433	404	472	464	502
Total ..	8,625	8,853	8,982	8,894	8,530	8,252
Ex-Nuptial Births as Percentage of Total Births ..	4.5	4.9	4.5	5.3	5.4	6.1

It should be noted that "first born" in the previous tables refers specifically to the union from which the child originates; thus a mother married for the second time could be credited with a "first-born" child despite issue from the previous union.

Birth Registrations

In 1964, the following were recorded by the Registrar General: nuptial births, 7,750; ex-nuptial births, 502; registrations under *Births Legitimation Act*, 58.

Infant Mortality

Infant mortality relates to children dying within one year of birth. The table that follows analyses such deaths at specified ages but a break in comparability occurs in 1962 when a more detailed analysis was employed and "one month" was replaced by "four weeks". The break in comparability is partly bridged by quoting 1962 figures both on the old and new basis of classification.

Infant Mortality—Number of Deaths and Mortality Rates at Specific Ages

Year	Infant Deaths		Mortality Rate (a) at Age Specified—		
	Number	Per 1,000 Live Births	Under 1 Week	1 Week and under 1 Mth.	1 Month and under 12 Mths
1954	186	23.9	15	2	7
1955	189	23.4	15	2	6
1956	170	21.0	13	2	6
1957	170	20.2	12	1	7
1958	167	19.5	10	2	7
1959	202	23.4	13	2	9
1960	169	19.1	10	1	8
1961	151	16.8	11	1	5
1962	184	20.7	12	2	7

Year	Infant Deaths		Mortality Rate (a) at Age Specified—			
	Number	Per 1,000 Live Births	Under 1 Day	1 Day and under 1 Week	1 Week and under 4 Wks.	4 Weeks and under 12 Mths
1962 ..	184	20.7	7	5	2	7
1963 ..	153	17.9	6	5	1	6
1964 ..	166	20.1	6	7	1	6

(a) Infant deaths per 1,000 live births; rates have been rounded to whole numbers.

Cause of Infant Deaths

The next table shows the causes of infant deaths during the last six years, with specification of groups of items and single items:

Infantile Mortality—Causes of Deaths Under One Year

Cause		1959	1960	1961	1962	1963	1964
057	Meningococcal Infections .. ..	..	1	..	..	..	..
001-056	Other General Diseases (a)	2	3	2	2	4	2
058-326		4	1	2	2	..	2
340	Meningitis .. ..	..	..	..	..	..	..
330-334	Other Diseases of the Nervous System	3	2	1	1	1	2
341-398		..	..	..	..	..	..
400-468	Diseases of the Circulatory System ..	1	..	..	..	1	..
470-475	Acute Upper Respiratory Infections	2	..	1	..	..	..
480-483	Influenza	1	..	..	..	..	1
490-493	Pneumonia	31	30	17	22	22	18
500-502	Bronchitis	2	1	2	1	1	1
510-527	Other Diseases, Respiratory System..	1	..	..	7	3	6
571	Gastro-Enteritis .. ..	..	1	..	2	3	3
530-570	Other Diseases of the Digestive System	6	5	..	3	3	4
572-587		..	..	..	..	..	..
590-594	Nephritis and Nephrosis .. ..	..	..	..	..	..	..
600-637	Other Diseases of the Genito-Urinary System .. ..	..	..	..	1	1	1
690-716		1	1	..	..	1	..
720-749	Diseases of the Bones and Organs of Movement .. ..	..	1	1	..	..	..
750-759	Congenital Malformations	40	41	32	50	35	28
760-769	Birth Injuries, Asphyxia and Infections of the New-Born	46	35	43	44	34	51
770-776	Other Diseases of Early Infancy ..	54	43	47	44	38	40
780-795	Ill-defined Conditions .. ..	..	..	..	..	..	..
800-999	External Causes	8	4	3	5	6	7
Total		202	169	151	184	153	166

(a) Principally infective and parasitic diseases.

All death statistics, including those relating to infant mortality, are compiled in accordance with the Seventh Revision (1955) of the International List of Causes of Death (World Health Organisation).

Deaths

The following table summarises the number of deaths and crude death rates since 1880:

Number of Deaths and Crude Death Rates, Selected Years from 1880

Year	Deaths		Year	Deaths	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	1,832	16.12	1930 ..	1,948	8.82
1885 ..	2,036	15.94	1935 ..	2,353	10.24
1890 ..	2,118	14.79	1940 ..	2,387	9.90
1895 ..	1,811	11.78	1945 ..	2,413	9.71
1900 ..	1,903	11.02	1950 ..	2,466	8.85
1905 ..	1,844	10.00	1955 ..	2,489	7.89
1910 ..	2,120	11.10	1960 ..	2,670	7.70
1915 ..	2,015	10.27	1963 ..	2,818	7.74
1920 ..	2,036	9.68	1964 ..	3,174	8.64
1925 ..	1,996	9.26	1965 ..	3,043	8.24

A marked difference exists between male and female crude death rates as shown in the next table:

Male and Female Deaths and Crude Rates

Year	Number of Deaths			Deaths Per 1,000 of Mean Population			Ratio of Male to Female Crude Death Rates
	Males	Females	Persons	Males	Females	Persons	
1954 ..	1,493	1,203	2,696	9.43	7.87	8.67	1.198
1955 ..	1,351	1,138	2,489	8.41	7.34	7.89	1.146
1956 ..	1,378	1,135	2,513	8.43	7.20	7.83	1.171
1957 ..	1,514	1,156	2,670	9.06	7.17	8.13	1.263
1958 ..	1,534	1,174	2,708	9.01	7.11	8.07	1.267
1959 ..	1,553	1,227	2,780	8.97	7.29	8.14	1.230
1960 ..	1,546	1,124	2,670	8.79	6.57	7.70	1.338
1961 ..	1,601	1,188	2,789	8.93	6.82	7.89	1.309
1962 ..	1,622	1,248	2,870	8.90	7.04	7.99	1.264
1963 ..	1,601	1,217	2,818	8.68	6.77	7.74	1.282
1964 ..	1,797	1,377	3,174	9.67	7.58	8.64	1.276

In the following table, crude death rates for Tasmania are compared with those of the continental States:

Australian States—Crude Death Rates (a)

State	1921 (b)	1933 (b)	1947 (b)	1954 (b)	1961 (b)	1963	1964
N.S.W. ..	9.50	8.58	9.53	9.46	8.95	9.19	9.58
Victoria ..	10.52	9.59	10.44	9.20	8.37	8.81	8.80
Queensland	9.37	8.83	9.15	8.64	8.42	8.50	9.16
S.A. ..	10.02	8.44	9.62	9.02	8.06	8.13	8.63
W.A. ..	10.42	8.64	9.39	8.38	7.77	7.73	8.14
Tasmania ..	10.30	9.60	9.17	8.67	7.89	7.74	8.64
Australia (c)	9.91	8.92	9.69	9.10	8.47	8.69	9.03

(a) Deaths per 1,000 of mean population.

(b) Census year.

(c) Includes Australian Capital Territory and Northern Territory.

Death Rates for Specific Age Groups

Previously in this chapter, crude death rates were described as unsuitable for comparisons over long periods of time due to changes in the age structure of the community. In the following table, this difficulty is overcome by calculating death rates for specific age groups. The method employed is to obtain the average annual deaths for specific age groups over those three-year periods which are broken in equal parts by a census of population (e.g. 30th June, 1933, is the census date for a calculation of rates in the three years 1932-1934 inclusive). Rates can then be calculated by comparing the average number of deaths for each group with the number of persons in each group as revealed by the census. In theory, the calculation of such rates need not be restricted to periods for which a census date forms the midpoint but the advantage of accepting such restriction lies in the accuracy of the age distribution obtained from the census. In the table, three-year periods have been selected appropriate to the censuses of 1933 and 1961.

Death Rates for Specific Age Groups (a)

Age Group (Years)	Males		Females		Persons	
	1932-34	1960-62	1932-34	1960-62	1932-34	1960-62
0-4	12.77	5.25	10.42	4.33	11.62	4.81
5-9	2.08	0.63	1.54	0.33	1.81	0.48
10-14	1.27	0.43	0.91	0.35	1.09	0.39
15-19	2.05	1.30	2.22	0.56	2.14	0.94
20-24	2.73	1.60	2.58	0.36	2.66	0.99
25-29	2.98	1.67	3.74	0.56	3.35	1.13
30-34	3.78	1.23	3.63	0.84	3.71	1.05
35-39	4.71	1.90	4.43	1.65	4.56	1.78
40-44	4.85	3.62	4.88	1.92	4.86	2.78
45-49	6.90	5.33	5.44	3.76	6.19	4.57
50-54	9.96	9.18	10.08	5.14	10.02	7.25
55-59	14.47	16.12	11.62	7.98	13.09	12.23
60-64	23.92	26.21	16.87	13.65	20.52	19.72
65-69	35.11	39.64	30.46	21.74	32.87	29.72
70-74	59.22	65.56	48.31	37.48	53.89	49.91
75-79	94.23	94.25	83.58	62.47	88.97	76.57
80-84	160.80	130.89	125.15	107.61	142.64	117.12
85-89	204.45	198.46	195.28	154.97	199.07	173.40
90 and over ..	401.97	407.69	363.63	276.59	376.36	323.29

(a) Rate per 1,000 of the population in the specified age group at census date.

While specific death rates for females in the age groups 55-74 years have decreased in the period covered by the table, corresponding rates for males in the same age groups have actually increased. Attention is also called to the differential rates applying to males and females in age groups 15-34 for the period 1960-62.

Causes of Death

The Sixth (1948) Revision of the International List of Causes of Death was adopted for use in classifying causes of death in 1950.

The Revision introduced international rules for a uniform method of selecting the underlying cause of death to be tabulated if more than one cause is stated on the death certificate. The adoption of the 1948 revision affected the comparability of statistics for years prior to 1950 with those for 1950 and subsequent years.

The Seventh (1955) Revision of the International List of Causes of Death was adopted for use in 1958 but has not materially affected comparability. The causes of deaths registered in Tasmania in 1964, classified according to the abbreviated list of the Seventh (1955) Revision, the rates per 100,000 of mean population and the proportion of deaths from each cause are shown in the following table:

Causes of Death: Numbers and Rates, 1964

Cause of Death	Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
1. Tuberculosis of Respiratory System.. ..	001-008	7	2	0.22
2. Tuberculosis, Other Forms	010-019	4	1	0.13
3. Syphilis and its Sequelae	020-029	3	1	0.09
4-16 (a)	(a)	1	(b)	0.03
17. All Other Diseases Classified as Infective and Parasitic	(c)	6	2	0.19
18. Malignant Neoplasms				
Digestive Organs and Peritoneum	150-159	184	50	5.80
Lung	162, 163	63	17	1.98
Breast	170	31	8	0.98
Genital Organs	171-179	69	19	2.17
Urinary Organs	180, 181	15	4	0.47
Leukaemia and Alcaemia	204	20	5	0.63
Other Malignant and Lymphatic Neoplasms	(d)	69	19	2.17
19. Benign and Unspecified Neoplasms	210-239	4	1	0.13
20. Diabetes Mellitus	260	47	13	1.48
21. Anaemias	290-293	12	3	0.38
22. Vascular Lesions Affecting Central Nervous System	330-334	323	88	10.18
23. Non-Meningococcal Meningitis	340	3	1	0.09
24. Rheumatic Fever	400-402	2	1	0.06
25. Chronic Rheumatic Heart Disease	410-416	21	6	0.66
26. { Arteriosclerotic Heart Disease	420	779	212	24.54
Degenerative Heart Disease	421, 422	163	44	5.14
27. Other Diseases of the Heart	430-434	130	35	4.10
28. Hypertension with Heart Disease	440-443	36	10	1.13
29. Hypertension without mention of Heart ..	444-447	37	10	1.17
30. Influenza	480-483	27	7	0.85
31. Pneumonia	490-493	177	48	5.58
32. Bronchitis	500-502	85	23	2.68
33. Ulcer of Stomach and Duodenum	540, 541	32	9	1.01
34. Appendicitis	550-553	..	..	..
35. Intestinal Obstruction and Hernia	560, 561, 570	15	4	0.47
36. Gastritis, Duodenitis, Enteritis and Colitis except Diarrhoea of the Newborn	543, 571, 572	16	4	0.51
37. Cirrhosis of Liver	581	19	5	0.60
38. Nephritis and Nephrosis	590-594	25	7	0.79
39. Hyperplasia of Prostate	610	19	5	0.60
40. Complications of Pregnancy, Childbirth and the Puerperium	640-652, 660, 670-689	2	1	0.06
41. Congenital Malformations	750-759	43	12	1.36
42. Birth Injuries, Post-Natal Asphyxia and Atelectasis	760-762	39	11	1.23
43. Infections of the Newborn	763-768	7	2	0.22
44. Other Diseases Peculiar to Early Infancy and Immaturity Unqualified	769-776	45	12	1.42
45. Senility without mention of Psychosis, Ill-defined and Unknown Causes	780-795,	15	4	0.47

Causes of Death: Numbers and Rates, 1964—continued

Cause of Death		Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
46.	General Arteriosclerosis	450	92	25	2.90
	Other Diseases of Circulatory System ..	451-468	40	11	1.26
	Other Diseases of Respiratory System ..	470-475, 510-527	38	10	1.20
	All Other Diseases	Residual	154	42	4.85
47.	Motor Vehicle Accidents	E810-E835	89	24	2.80
48.	All Other Accidents	E800-E802, E840-E962	121	33	3.81
49.	Suicide and Self-inflicted Injuries	E963, E970-E979	42	12	1.32
50.	Homicide and Operations of War	E964, E965, E980-E999	3	1	0.09
All Causes .. ..		..	3,174	864	100.00

(a) 040, 043, 045-048, 050, 051, 055-058, 080, 084, 085, 100-108, 110-117.

(b) Less than 0.5.

(c) 030-039, 041, 042, 044, 052-054, 059-074, 081-083, 086-096, 120-138.

(d) 140-148, 160, 161, 164, 165, 190-203, 205.

It will be noted that Items 4-16 inclusive in the previous table were not listed, few associated deaths having been recorded. The specification of causes reads: (4) Typhoid Fever; (5) Cholera; (6) Dysentery, All Forms; (7) Scarlet Fever and Streptococcal Sore Throat; (8) Diphtheria; (9) Whooping Cough; (10) Meningococcal Infections; (11) Plague; (12) Acute Poliomyelitis; (13) Smallpox; (14) Measles; (15) Typhus and Other Rickettsial Diseases; (16) Malaria. Uncertainty as to diagnosis in earlier periods makes comparison difficult but, at the turn of the century, whooping cough, diphtheria, typhoid fever and scarlet fever were diseases associated with numerous deaths.

Causes of Death in Age Groups

The previous table showing causes of death makes no reference to age, a complete dissection by age and cause being beyond the scope of a Year Book. Nevertheless, there is an extremely significant relationship between age and cause of death and the next table indicates, in summary form, their close inter-connection.

For each of the specified causes in the table, two percentages are shown:

- (i) Deaths in a particular age group as a proportion of total deaths from all causes in that age-group.
- (ii) Deaths in a particular age group as a proportion of total deaths from the same cause at all ages.

The causes chosen and specified are such that they account, in total, for approximately 75 per cent or more of deaths in any given age group.

Attention is called to "Accidental and Violent Deaths" (800-999) which account for over 50 per cent of deaths in the age groups five to 14, 15 to 19, 20 to 24, and 25 to 34 years. Also noteworthy is the present relative unimportance of "Infective and Parasitic Diseases" (001-138). The most important group, in a total sense, is "Diseases of the Heart" (401, 410-443) followed by "Malignant Neoplasms—All Forms" (140-205); then "Vascular Lesions Affecting Central Nervous System" (330-334) followed by "Pneumonia, Bronchitis and Influenza" (480-502, 763); nevertheless, the inter-connection between age and cause of death is so close that none of these causes needs to be specified for some age-groups in the table.

Main Causes of Death (in Age Groups), 1964

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
	Under One Year:	166	100.0	..	..
762	Post-natal asphyxia and atelectasis	14	8.4	14	100.0
750-759	Congenital malformations ..	28	16.9	43	65.1
760, 761	Birth injuries	25	15.1	25	100.0
774-776	Immaturity	29	17.5	29	100.0
480-502, 763	Pneumonia, bronchitis and influenza	27	16.2	296	9.1
..	Other causes	43	25.9	..	..
	1-4 years:	37	100.0	..	..
800-999	Accidental and violent deaths ..	14	37.8	255	5.5
750-759	Congenital malformations ..	4	10.8	43	9.3
140-205	Cancer (all forms) (b) ..	1	2.7	451	0.2
480-502	Pneumonia, bronchitis and influenza	11	29.7	296	3.7
001-138	Infective and parasitic diseases ..	1	2.7	21	4.8
..	Other causes	6	16.3	..	..
	5-14 years:	35	100.0	..	..
800-999	Accidental and violent deaths ..	21	60.0	255	8.2
140-205	Cancer (all forms) (b)	2	5.7	451	0.4
480-502	Pneumonia, bronchitis and influenza	2	5.7	296	0.7
..	Other causes	10	28.6	..	..
	15-19 Years:	32	100.0	..	..
800-999	Accidental and violent deaths ..	20	62.5	255	7.8
140-205	Cancer (all forms) (b)	3	9.4	451	0.7
750-759	Congenital malformations ..	2	6.3	43	4.7
..	Other causes	7	21.8	..	..
	20-24 Years:	27	100.0	..	..
800-999	Accidental and violent deaths ..	18	66.7	255	7.1
140-205	Cancer (all forms) (b)	2	7.4	451	0.4
750-759	Congenital malformations ..	1	3.7	43	2.3
..	Other causes	6	22.2	..	..
	25-34 Years:	63	100.0	..	..
800-999	Accidental and violent deaths ..	33	52.4	255	12.9
140-205	Cancer (all forms) (b)	7	11.1	451	1.6
401, 410-443	Diseases of the heart	6	9.5	1,131	0.5
001-138	Infective and parasitic diseases ..	1	1.6	21	4.8
..	Other causes	16	25.4	..	..
	35-44 Years:	101	100.0	..	..
800-999	Accidental and violent deaths ..	30	29.7	255	11.8
140-205	Cancer (all forms) (b)	20	19.8	451	4.4
401, 410-443	Diseases of the heart	16	15.8	1,131	1.4
480-502	Pneumonia, bronchitis and influenza	6	5.9	296	2.0
001-138	Infective and parasitic diseases ..	4	4.0	21	19.0
..	Other causes	25	24.8	..	..
	45-54 Years:	241	100.0	..	..
401, 410-443	Diseases of the heart	93	38.6	1,131	8.2
140-205	Cancer (all forms) (b)	59	24.5	451	13.1
800-999	Accidental and violent deaths ..	26	10.8	255	10.2
330-334	Vascular lesions affecting central nervous system	8	3.3	323	2.5
480-502	Pneumonia, bronchitis and influenza	12	5.0	296	4.1
..	Other causes	43	17.8	..	..

Main Causes of Death (in Age Groups), 1964—continued

International List Number	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
401, 410-443 140-205 330-334 800-999 480-502 ..	55-64 Years:	467	100.0	..	..
	Diseases of the heart	192	41.1	1,131	16.9
	Cancer (all forms) (b)	106	22.7	451	23.5
	Vascular lesions affecting central nervous system	44	9.4	323	13.6
	Accidental and violent deaths ..	16	3.4	255	6.3
	Pneumonia, bronchitis and influenza	33	7.1	296	11.1
	Other causes	76	16.3	..	..
401, 410-443 140-205 330-334 480-502 800-999 ..	65-74 Years:	714	100.0	..	..
	Diseases of the heart	297	41.6	1,131	26.3
	Cancer (all forms) (b)	120	16.8	451	26.6
	Vascular lesions affecting central nervous system	73	10.2	323	22.6
	Pneumonia, bronchitis and influenza	64	9.0	296	21.6
	Accidental and violent deaths ..	23	3.2	255	9.0
	Other causes	137	19.2	..	..
401, 410-443 330-334 140-205 450-456 480-502	75 Years and Over:	1,291	100.0	..	..
	Diseases of the heart	524	40.6	1,131	46.3
	Vascular lesions affecting central nervous system	187	14.5	323	57.9
	Cancer (all forms) (b)	131	10.1	451	29.0
	Diseases of arteries	83	6.4	119	69.7
	Pneumonia, bronchitis and influenza	140	10.8	296	47.3
	Other causes	226	17.6	..	..

(a) Deaths in the specified age group as a percentage of total deaths for a particular cause.

(b) Includes Hodgkin's disease and the leukaemias.

Heart Diseases

As the previous table indicates, heart diseases (list items 401, 410-443) are the greatest single cause of death. In the following record of deaths due to heart diseases, 1950 has been chosen as a start-point since earlier figures are not strictly comparable:

Deaths from Heart Diseases (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	413	304	717	257	29.1
1959 ..	553	347	900	264	32.4
1960 ..	535	356	891	257	33.4
1961 ..	580	370	950	269	34.1
1962 ..	622	405	1,027	286	35.8
1963 ..	599	426	1,025	281	36.4
1964 ..	677	454	1,131	308	35.6

(a) List items 401, 410-443.

Tuberculosis

A development of recent years has been the marked decline in deaths attributed to tuberculosis. In the following table, 1950 has been chosen as

the start-point, earlier figures being not strictly comparable due to changes in classification and in the method of determining a single cause of death where multiple causes are shown on the death certificate.

Deaths from Tuberculosis (All Forms) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	27	44	71	25	2.9
1959 ..	13	6	19	6	0.7
1960 ..	14	8	22	6	0.8
1961 ..	10	5	15	4	0.5
1962 ..	11	1	12	3	0.4
1963 ..	10	4	14	4	0.5
1964 ..	10	1	11	3	0.3

(a) List items 001-019.

Malignant Neoplasms

In the next table, deaths attributed to list items 140-205 are analysed, the causes being summarised as "Malignant Neoplasms including Hodgkin's Disease and the Leukaemias":

Deaths from Malignant Neoplasms (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	159	164	323	115	13.1
1959 ..	197	171	368	108	13.2
1960 ..	230	177	407	117	15.2
1961 ..	200	196	396	113	14.2
1962 ..	263	203	466	129	16.2
1963 ..	207	211	418	115	14.8
1964 ..	230	221	451	123	14.2

(a) List items 140-205.

Lung Cancer

There has been considerable interest recently in lung cancer because of its suspected connection with smoking habits. The following table shows deaths attributed to Malignant Neoplasm of Respiratory System (160-165) since 1950:

Deaths from Malignant Neoplasm of Respiratory System

Year	Deaths, List Items 160-165			Year	Deaths, List Items 160-165		
	Males	Females	Persons		Males	Females	Persons
1950 ..	20	4	24	1958 ..	29	10	39
1951 ..	19	5	24	1959 ..	43	11	54
1952 ..	16	6	22	1960 ..	40	3	43
1953 ..	19	1	20	1961 ..	47	3	50
1954 ..	23	5	28	1962 ..	70	8	78
1955 ..	33	7	40	1963 ..	44	9	53
1956 ..	35	9	44	1964 ..	51	16	67
1957 ..	43	7	50				

Expectation of Life and Life Tables

Previously reference was made to the limitations of crude death rates as a measure of mortality. However, a correct measurement of the mortality of the population can be obtained from life tables.

A life table is, in effect, a mathematical model, its starting point being a hypothetical population (say 100,000) of newly-born males or females. Using data for a given period (e.g. single year age distribution of an actual population, deaths at single ages, etc.), the compiler calculates the theoretical number of survivors at each age in the hypothetical population until there are no survivors remaining.

In the table that follows, l_x is the number of persons surviving at exact age x . From this survivors' table, other measures can then be computed, namely:—

L_x :— the average number living between any year x and $x + 1$

e^o_x :— the complete expectation of life (i.e. the average number of years lived after age x by each of a group of persons aged exactly x).

Not only does the l_x column give numbers of survivors at each age but, if accumulated, it gives an approximate measure of the total number of years lived by the life-table population. To obtain a more refined measure of the total number of years lived, it is necessary to accumulate L_x values. These can be obtained by averaging each consecutive pair of l_x values.

Taking the male life table as an example:

Total of all l_x values (0-105) = 6,763,970 years

Total of all l_{x+1} values (1-105) = 6,663,970 years

Therefore, total L_x values (0-105) = 6,713,970 years

According to the table, 100,000 males live a total of 6,713,970 years. It follows, then, that the complete expectation of life (e^o_x) can be taken as 67.14 years as from birth.

The above calculation shows the derivation of e^o_x where x is 0. The same logic applies to all other ages:

Again taking the male life table as an example:

Total of l_x values (10-105) = 5,791,978 years

Total of all l_{x+1} values (11-105) = 5,695,490 years

Therefore, total L_x values (10-105) = 5,743,734 years

According to the table, 96,488 males live a total of a further 5,743,734 years. It follows then that each male aged 10 has an average life expectancy of a further 59.53 years (i.e. $\frac{5,743,734}{96,488}$)

From these examples, it will be seen that e^o_x is simply an average or per capita figure, the two elements involved being the total number of years lived by a given population and the given population itself.

For the sake of brevity in the table, the following usual values have not been given:

dx ; the number of deaths in the year of age x to $x + 1$ among the l_x persons who enter on that year.

p_x ; the probability of a person aged x living a year.

q_x ; the probability of a person aged x dying within a year.

If required, these values can be computed from the tables as follows:

$$dx = l_x - l_{x+1}$$

$$p_x = \frac{l_{x+1}}{l_x}$$

$$\text{and } q_x = 1 - p_x$$

Australia: Life Tables, 1953-55
Survivors (l_x) and Complete Expectation of Life ($e^{\circ}x$)

Males

Age x	l_x	$e^{\circ}x$	Age x	l_x	$e^{\circ}x$	Age x	l_x	$e^{\circ}x$
0 ..	100,000	67.14	35 ..	92,955	36.25	70 ..	54,054	9.59
1 ..	97,479	67.86	36 ..	92,764	35.33	71 ..	51,181	9.11
2 ..	97,210	67.05	37 ..	92,562	34.40	72 ..	48,211	8.63
3 ..	97,036	66.17	38 ..	92,345	33.48	73 ..	45,162	8.17
4 ..	96,908	65.26	39 ..	92,112	32.56	74 ..	42,059	7.74
5 ..	96,811	64.32	40 ..	91,861	31.65	75 ..	38,927	7.33
6 ..	96,735	63.37	41 ..	91,588	30.75	76 ..	35,791	6.92
7 ..	96,666	62.42	42 ..	91,291	29.84	77 ..	32,676	6.54
8 ..	96,603	61.46	43 ..	90,967	28.95	78 ..	29,602	6.17
9 ..	96,544	60.49	44 ..	90,612	28.06	79 ..	26,589	5.81
10 ..	96,488	59.53	45 ..	90,221	27.18	80 ..	23,658	5.47
11 ..	96,434	58.56	46 ..	89,790	26.31	81 ..	20,829	5.14
12 ..	96,380	57.59	47 ..	89,313	25.44	82 ..	18,127	4.84
13 ..	96,320	56.63	48 ..	88,785	24.59	83 ..	15,579	4.55
14 ..	96,249	55.67	49 ..	88,200	23.75	84 ..	13,209	4.28
15 ..	96,162	54.72	50 ..	87,553	22.92	85 ..	11,039	4.01
16 ..	96,057	53.78	51 ..	86,836	22.11	86 ..	9,086	3.77
17 ..	95,933	52.85	52 ..	86,042	21.31	87 ..	7,358	3.54
18 ..	95,790	51.93	53 ..	85,164	20.52	88 ..	5,857	3.33
19 ..	95,631	51.01	54 ..	84,196	19.75	89 ..	4,577	3.12
20 ..	95,460	50.10	55 ..	83,132	19.00	90 ..	3,507	2.93
21 ..	95,282	49.20	56 ..	81,967	18.26	91 ..	2,630	2.74
22 ..	95,103	48.29	57 ..	80,697	17.54	92 ..	1,927	2.56
23 ..	94,926	47.38	58 ..	79,322	16.84	93 ..	1,376	2.40
24 ..	94,754	46.46	59 ..	77,842	16.15	94 ..	956	2.24
25 ..	94,588	45.54	60 ..	76,256	15.47	95 ..	645	2.10
26 ..	94,427	44.62	61 ..	74,562	14.81	96 ..	421	1.95
27 ..	94,269	43.69	62 ..	72,758	14.17	97 ..	266	1.82
28 ..	94,113	42.76	63 ..	70,840	13.54	98 ..	162	1.70
29 ..	93,958	41.83	64 ..	68,805	12.93	99 ..	95	1.57
30 ..	93,801	40.90	65 ..	66,651	12.33	100 ..	53	..
31 ..	93,642	39.97	66 ..	64,377	11.74	101 ..	28	..
32 ..	93,479	39.04	67 ..	61,980	11.18	102 ..	14	..
33 ..	93,311	38.11	68 ..	59,460	10.63	103 ..	7	..
34 ..	93,137	37.18	69 ..	56,816	10.10	104 ..	3	..

Australia: Life Tables, 1953-55
Survivors (l_x) and Complete Expectation of Life (e°_x)
Females

Age x	l_x	e°_x	Age x	l_x	e°_x	Age x	l_x	e°_x
0 ..	100,000	72.75	35 ..	95,519	40.67	70 ..	69,613	11.62
1 ..	98,011	73.22	36 ..	95,384	39.73	71 ..	67,351	11.00
2 ..	97,770	72.40	37 ..	95,237	38.79	72 ..	64,921	10.39
3 ..	97,642	71.49	38 ..	95,077	37.85	73 ..	62,320	9.80
4 ..	97,553	70.55	39 ..	94,904	36.92	74 ..	59,547	9.23
5 ..	97,471	69.61	40 ..	94,715	36.00	75 ..	56,601	8.69
6 ..	97,405	68.66	41 ..	94,509	35.07	76 ..	53,488	8.17
7 ..	97,350	67.70	42 ..	94,285	34.15	77 ..	50,216	7.66
8 ..	97,304	66.73	43 ..	94,041	33.24	78 ..	46,802	7.18
9 ..	97,264	65.76	44 ..	93,774	32.34	79 ..	43,265	6.72
10 ..	97,228	64.78	45 ..	93,481	31.44	80 ..	39,633	6.30
11 ..	97,194	63.80	46 ..	93,162	30.54	81 ..	35,942	5.89
12 ..	97,160	62.83	47 ..	92,814	29.65	82 ..	32,235	5.51
13 ..	97,124	61.85	48 ..	92,434	28.77	83 ..	28,563	5.16
14 ..	97,085	60.87	49 ..	92,021	27.90	84 ..	24,981	4.83
15 ..	97,042	59.90	50 ..	91,573	27.03	85 ..	21,545	4.52
16 ..	96,995	58.93	51 ..	91,088	26.18	86 ..	18,309	4.23
17 ..	96,945	57.96	52 ..	90,564	25.32	87 ..	15,318	3.95
18 ..	96,891	56.99	53 ..	89,999	24.48	88 ..	12,605	3.70
19 ..	96,834	56.03	54 ..	89,392	23.64	89 ..	10,192	3.46
20 ..	96,774	55.06	55 ..	88,739	22.81	90 ..	8,087	3.24
21 ..	96,712	54.10	56 ..	88,038	21.99	91 ..	6,287	3.03
22 ..	96,648	53.13	57 ..	87,285	21.18	92 ..	4,782	2.83
23 ..	96,582	52.17	58 ..	86,476	20.37	93 ..	3,551	2.64
24 ..	96,515	51.20	59 ..	85,605	19.57	94 ..	2,570	2.47
25 ..	96,446	50.24	60 ..	84,665	18.78	95 ..	1,810	2.31
26 ..	96,375	49.28	61 ..	83,646	18.01	96 ..	1,238	2.15
27 ..	96,301	48.31	62 ..	82,542	17.24	97 ..	820	2.00
28 ..	96,224	47.35	63 ..	81,343	16.49	98 ..	525	1.87
29 ..	96,142	46.39	64 ..	80,043	15.75	99 ..	324	1.75
30 ..	96,055	45.43	65 ..	78,633	15.02	100 ..	192	..
31 ..	95,963	44.48	66 ..	77,105	14.31	101 ..	109	..
32 ..	95,864	43.52	67 ..	75,449	13.61	102 ..	59	..
33 ..	95,758	42.57	68 ..	73,655	12.93	103 ..	31	..
34 ..	95,643	41.62	69 ..	71,712	12.27	104 ..	15	..

The tables are extracts from those produced by the Commonwealth Actuary, the source data being supplied by the Commonwealth Statistician and comprising: (i) the number of males and females living at each age last birthday, as shown by the 1954 Census; (ii) the number of male and female deaths at each age (last birthday) in the years 1953, 1954 and 1955.

There are no life tables prepared on the basis of Tasmanian experience and in most legal and actuarial situations, it is normal to use the Australian Life Tables. (Life Tables, 1960-62, have now been published.)

True Death Rates

The true death rate is the reciprocal of the complete expectation of life of a person at birth. In calculating e°_x where x is 0, the sum of the L_x values was taken as the total number of years lived by the original 100,000 over a period of a century or more. To arrive at the true death rate, the life-table can also be regarded as the experience of a single year so that the sum of the L_x values

no longer represents years lived but simply persons "at risk" in association with 100,000 deaths. By way of illustration, in the male life table the sum of all survivors (L_x values) is 6,713,970 males associated with 100,000 deaths:

$$\text{True Death Rate} = \frac{100,000}{6,713,970} = 14.89 \text{ per } 1,000$$

The true death rate for a given period is unaffected by the particular age distribution of that period, and is determined solely by the mortality experience of the period as manifested in the rate of survival from each year of age to the next. The table below sets out complete expectation of life at birth and true death rates for the periods covered by Australian life tables:

Australia—Complete Expectation of Life at Birth and True Death Rates

Period	Complete Expectation of Life At Birth (Years)		True Death Rate (a)	
	Males	Females	Males	Females
1881-1890	47.20	50.84	21.19	19.67
1891-1900	51.06	54.76	19.58	18.26
1901-1910	55.20	58.84	18.12	17.00
1920-1922	59.15	63.31	16.91	15.80
1932-1934	63.48	67.14	15.75	14.89
1946-1948	66.07	70.63	15.14	14.16
1953-1955	67.14	72.75	14.89	13.75

(a) Number of deaths per 1,000 in stationary (or life-table) population.

While the complete expectation of life at birth has shown a marked increase in successive tables, the increase at other ages has not been so pronounced. The following table compares the complete expectation of life at selected ages for the period 1891-1900 with that for 1953-1955:

Australia—Comparative Complete Expectation of Life

Age x	Expectation of Life (e^x) at each age according to experience of period.			
	Male Lives		Female Lives	
	1891-1900	1953-1955	1891-1900	1953-1955
0	51.06	67.14	54.76	72.75
5	55.61	64.32	58.64	69.61
10	51.43	59.53	54.46	64.78
15	46.98	54.72	49.97	59.90
20	42.81	50.10	45.72	55.06
25	38.90	45.54	41.69	50.24
30	35.11	40.90	37.86	45.43
35	31.34	36.25	34.14	40.67
40	27.65	31.65	30.49	36.90
45	23.99	27.18	26.69	31.44
50	20.45	22.92	22.93	27.03
55	17.08	19.00	19.29	22.81
60	13.99	15.47	15.86	18.78
65	11.25	12.33	12.75	15.02
70	8.90	9.59	9.89	11.62
75	6.70	7.33	7.37	8.69
80	5.00	5.47	5.49	6.30

It will be noted that e^x for age 5 years in the period 1891-1900 was actually higher than for age 0 years. This peculiarity was associated with the extremely high rate of infant mortality then prevailing.

Chapter 6

PRIMARY INDUSTRY—RURAL

LAND TENURE AND SETTLEMENT

Introduction

The area of Tasmania is 16,885,000 acres, all of which was Crown property when the first settlers arrived in 1803. In the hundred and sixty years or so since their landing, 39 per cent of the State's total area has been alienated by grant or sale and is owned by individual persons, partnerships, companies and corporations; the balance, 61 per cent, is still vested in the Crown.

Historical

The first concern of the settlers on the Derwent and the Tamar in 1804 was the growing of grain for which small holdings were adequate; thus by 1820, land obtained as grants from the Crown was confined to areas within easy reach of Hobart and Launceston and of the 16,885,000 acres of Crown land, less than 70,000 acres had been alienated.

In the 1820's, the successful export of wool to Britain created a demand for land in very much larger holdings and annual alienation of Crown land by free grant increased rapidly as shown in the following table:

Area of Land Alienated by Grants in Van Diemen's Land, 1820 to 1843
(⁰⁰⁰ Acres)

Year	Area Granted	Year	Area Granted	Year	Area Granted	Year	Area Granted
1820 ..	69	1826 ..	60	1832 ..	33	1838 ..	45
1821 ..		1827 ..	77	1833 ..	24	1839 ..	15
1822 ..	(a)	1828 ..	165	1834 ..	9	1840 ..	10
1823 ..	434	1829 ..	208	1835 ..	9	1841 ..	7
1824 ..	43	1830 ..	108	1836 ..	8	1842 ..	..
1825 ..	(b)462	1831 ..	206	1837 ..	22	1843 ..	1

(a) Not available.

(b) Includes 350,000 acres granted to Van Diemen's Land Company.

From the previous table, it can be calculated that the alienation of Crown land by grant exceeded, in total, one million acres by 1825 and two million acres by 1843 (when this early system of free grants had virtually ceased). Apart from the 350,000 acres granted to the Van Diemen's Land Company in the north-west, the other alienated land included virtually the whole Midlands, the upper Derwent Valley and much of the east coast. At the same point in time—1843—less than 500,000 acres of Crown land had been sold, even though the price per acre ranged from 5s. (\$0.50) to 12s. (\$1.20).

A table in "Statistics of Van Diemen's Land" gives details of alienation, in aggregate, and of leasing of Crown land at the 1st January, 1850 as follows:

Total Area Granted and Sold to Settlers	2,722,513 Acres
Area of Land Held under Depasturing Licences ..	1,335,779 Acres

The Crown land under licence was a source of revenue to the Government which made available 1.3 million acres for a rental of £16,714 (\$33,428) in 1849. From this point of time, the process of alienation can be summarised as follows:

Land Alienation from 1860
(^{'000 Acres})

Year (a)	Land		Year (a)	Land	
	Aggregate Alienated	In Process of Alienation		Aggregate Alienated	In Process of Alienation
1860.. ..		3,069	1940	5,912	423
1870.. ..		3,806	1950	6,143	365
1880.. ..		4,233	1959	6,362	199
1890.. ..		4,695	1960	6,386	190
1900.. ..		4,835	1961	6,403	212
1910.. ..	4,932	1,104	1962	6,417	197
1920.. ..	5,242	964	1963	6,430	199
1930.. ..	5,721	542	1964	6,598	220

(a) At 31st December until 1948; at 30th June for 1950 and following years.

Sales of Crown Land

The sale of Crown land is currently carried out under the *Crown Lands Act* 1935 as amended. Sales fall into two broad categories: (i) by selection; (ii) by auction. In the case of selection, three classifications of rural land are established and purchase is made over a number of years by instalments, the term depending on the class of land. Land on which such instalments are being paid is defined as "Crown land in process of alienation". The following table shows details of sales made during 1963-64:

Sales of Crown Land, 1963-64

Particulars	Number of Lots	Area (Acres)	Value	
			Total (\$)	Average per Acre (\$)
Selections (Country Land) (a)—				
First-class land	22	2,461	37,418	15.20
Second-class land	56	9,911	42,092	4.25
Third-class land	11	20,339	31,844	1.57
Sold by Auction (Country Land) ..	36	807	13,584	16.83
Total	125	33,518	124,938	3.73
Town and Suburban Lots	93	747	39,786	53.33
Grand Total	218	34,265	164,724	..

(a) Financial details refer to the contract price, the actual payment being made in instalments over a period of years.

The next table summarises sales of Crown land over a five-year period:

Sales of Crown Land—Summary

Year	Area of Land Sold (Acres)			Average Price Per Acre (\$)	
	Country Lots	Town and Suburban Lots	Total	Country Lots	Town and Suburban Lots
1959-60 ..	2,477	124	2,601	4.62	259.52
1960-61 ..	11,992	205	12,197	3.32	256.25
1961-62 ..	5,457	65	5,522	4.94	318.45
1962-63 ..	14,478	318	14,796	4.93	120.65
1963-64 ..	33,518	747	34,265	3.73	53.33

Present Use of Crown Lands

The total area of Tasmania is 16,885,000 acres, of which, at 30th June, 1964, 39.1 per cent had been alienated; 1.3 per cent was in the process of alienation; the balance, 59.6 per cent, was Crown land, a proportion of which was under lease or licence for pastoral, agricultural and mining purposes. Crown land reserved for forestry purposes, including the State Forests, accounted for 20.8 per cent of the State's area. ("Reservation" in the context of forestry does not imply land withheld from all types of use but simply land either used or to be used exclusively for forestry purposes.)

Alienation and Occupation of Crown Lands, 30th June, 1964

Classification of Land	Area	
	Acres	Acres
Alienated (Aggregate)		6,597,878
In Process of Alienation		219,934
Crown Lands—		
Leased or Licensed—		
By Lands Department—		
Pastoral	1,004,147	
Closer Settlement	15,747	
Soldier Settlement	40,882	
Short-term	1,128	
By Mines Department	42,000	
Total Leased or Licensed		1,103,904
Forestry Reservations—		
State Forests	2,391,291	
Other Land Reserved for Forestry Purposes	1,120,053	
Total Forestry Reservations		3,511,344
Other Crown Land		5,451,940
Area of State		16,885,000

In the previous table appears the item "forestry reservations". Over 1.5 million acres of this area are lands where cutting rights have been granted, either by exclusive forestry permit or by the award of pulpwood concessions.

Over 70 per cent (1963-64) of the logs for sawmills, paper mills, &c. were obtained from these forestry reservations. Fuller details of Crown land reserved for forestry appear in the Forestry section of Chapter 7, "Primary Industry—Non Rural".

The next table summarises the alienation and occupation of Crown lands over a five-year period:

**Alienation and Occupation of Crown Lands
At 30th June**

Classification of Land	1960	1961	1962	1963	1964
AREA ('000 ACRES)					
Alienated (Aggregate) ..	6,386	6,403	6,417	6,430	6,598
In Process of Alienation ..	190	212	197	199	220
Crown Lands—					
Leased or Licensed (a) ..	1,135	1,126	1,137	1,076	1,104
Forestry Reservations (b) ..	3,043	3,295	3,263	3,407	3,511
Other	6,131	5,849	5,871	5,773	5,452
PROPORTION OF TOTAL AREA (PER CENT)					
Alienated (Aggregate) ..	37.8	37.9	38.0	38.1	39.1
In Process of Alienation ..	1.1	1.3	1.2	1.2	1.3
Crown Lands—					
Leased or Licensed (a) ..	6.7	6.7	6.7	6.4	6.5
Forestry Reservations (b) ..	18.0	19.5	19.3	20.2	20.8
Other	36.4	34.6	34.8	34.1	32.3

(a) By Lands Department and by Mines Department.

(b) Including State Forests.

As shown in the previous table, Crown land at 30th June, 1964 occupies 59.6 per cent of the State's total area. The bulk of this land is located in the western half of the island where altitude, rainfall and soil, either individually or in combination, prevent successful farming development. The only other large concentration of Crown land is in the north-east.

Although the possibility of rapidly alienating more Crown land for farming purposes on any large scale may seem remote, it should be noted that much of this area is nevertheless of importance to the State's economy, specifically for forestry and tourism. The reservation of Crown land for forestry use occupies approximately 20.8 per cent of the area of the State while reservations classed as National Parks and Scenic Reserves account for nearly a further four per cent. Details of the latter type of reservation appear in the next section.

National Parks and Scenic Reserves

The Scenery Preservation Board is responsible for the administration of the State's National Parks and Scenic Reserves which occupy a part of the residual Crown land. Details of National Parks are as follows:

National Parks

Name	Locality	Area (Acres)
Cradle Mountain-Lake St. Clair	Central Highlands	338,501
Lake Pedder	South-West	59,000
Mt. Field	Derwent Valley	40,033
Ben Lomond	North-East	39,460
Frenchmans Cap	West Coast	25,240
Hartz Mountains	South	21,300
Mt. Barrow	North	1,134
Freycinet Peninsula	East Coast	18,000

The total area under reservation as National Park or Scenic Reserve exceeds 580,000 acres and the following list gives details of the various types of reserve, together with location and area (expressed to the whole number below where fractions of an acre are recorded):

Scenic Reserves

Type of Reserve and Name	Locality	Area (Acres)
Coastal Reserves—		
Stewarts Bay	Tasman Peninsula	4
Stewarts Bay, Esplanade, Pt. Puer	Tasman Peninsula	58
Pt. Puer-Crescent Bay	Tasman Peninsula	92
Brown Mt.-Remarkable Cave	Tasman Peninsula	150
Eaglehawk Neck and Foreshore	Tasman Peninsula	90
Eaglehawk Neck-Taranna	Tasman Peninsula	61
Tasman Arch-Blowhole	Tasman Peninsula	146
Waterfall Bay	Tasman Peninsula	30
Lookout Rock	Bicheno	5
Cookville-Penguin Island	Bruny Island	3
Fluted Cape-Cloudy Bay	Bruny Island	600
Port Davey Foreshore	South-West	1,350
Port Davey Islands	South-West	202
Waterfalls—		
St. Columba	Pyengana	775
Forth	Sheffield	135
Marriott	National Park	300
Liffey	Western Tiers	50
River Reserves—		
River Pieman	West Coast	8,215
River Gordon	West Coast	6,200
Roger River Pass	North-West	430
Derwent Cliffs	New Norfolk	11
Cave Reserves—		
Hastings	South	131
Marakoopa	Mole Creek	146
King Solomon	Mole Creek	500
Baldock (3 areas)	Mole Creek	{ 37
		{ 63
		{ 5
Gunns Plains	Ulverstone	24
Scenic Roads—		
Lyell Highway	Western Highlands	18,000
Zeehan-Renison Bell	West Coast	272
St. Marys Pass	St. Marys	674

Scenic Reserves—continued

Type of Reserve and Name	Locality	Area (Acres)
Fern Gullies, Forests, etc.—		
Thermal Springs	Kimberley	1
Thermal Springs	Hastings	19
Chalet	Hastings	1
Waterfall Creek	Bruny Island	60
Ferndene Gorge	Penguin	6
Notley Gorge	West Tamar	28
Hellyer Gorge	Waratah area	1,406
Corra Linn	Launceston	1
Corinna	West Coast	8
Bird Sanctuary	Steppes	16
Fairy Glade	Western Tiers	97
Bradys Lookout	Rosevears	1
Parramores Lookout	Port Arthur	1
Historic Sites, Buildings and Monuments—		
Town of Port Arthur	Tasman Peninsula	217
Mt. Arthur	Tasman Peninsula	10
Convict Coal Mines	Saltwater River	520
Bowen's Monument	Risdon	0
Bowen Park	Risdon	6
"George III" Monument	Southport	25
Tasman Monument	Dunalley	0
D'Entrecasteaux Monument	Gordon	1
York Town	West Tamar	6
Recherche Bay	Ramsgate	3
Settlement Island	Macquarie Harbour	15
Isle of Condemned	Macquarie Harbour	0
Old Gaol and Paddock	Richmond	1
Entally House	Hadspen	92
Steppes Homestead	Steppes	25
Shot Tower	Taroona	8
Waubadebar's Grave	Bicheno	0
Toll House	New Norfolk	0
Bluff Battery	Bellerive	4
Oatlands Mill	Oatlands	0
161 Davey Street	Hobart	0

War Service Land Settlement

After both World War I and World War II, Government schemes were operated with the aim of assisting ex-servicemen to settle on the land. The following section deals only with the scheme initiated to settle on the land eligible ex-servicemen from the 1939-45 War and the Korea-Malaya operations.

Finance for capital expenditure under the scheme is provided under the authority of the Commonwealth Parliament's Loan (War Service Land Settlement) Acts but the State Government is the administrative authority for actual operations, control being exercised through the War Service Land Settlement Division of the Agricultural Bank. The basic work of the Division has involved land acquisition and the development of rural holdings on which eligible ex-servicemen are then settled.

The following table summarises progress to 30th June, 1964 in physical terms (farms allotted, &c.) and in financial terms (loans to settlers, payments for acquisition, &c.):

War Service Land Settlement
(1939-45 War and Korea-Malaya Operations)
Summary to 30th June, 1964

Operations		Commonwealth Expenditure (Aggregate)	
Particulars	Total to 30th June, 1964	Advances in Respect of Tasmania	Total to 30th June, 1964 (\$'000)
Land Acquired (Acres) ..	447,624	For Acquisition of Land	5,044
Farms Allotted—		For Development and Improvement of	
Number	523	Land	32,236
Area (Acres) ..	421,000	Special Loans .. .. .	..
Farms Being Developed—		Contribution to Excess Cost over Val-	
Number	40	uation	1,440
Area (Acres) ..	20,000	Settlers' Credit Facilities	10,574
Other Land (Acres) (a) ..	6,624	Remission of Settlers' Rent and Interest	324
		Living Allowances For Settlers ..	324
		Irrigation Projects	6
		Loss on Advances	40
		Cost of Administration of Credit	
		Facilities	418
		Total	50,406

(a) Land disposed of outside the scheme and discrepancies to be corrected upon survey.

Of the farms allotted to 30th June, 1964, the largest concentrations were at King Island, Flinders Island, the Lawrenny estate and the Montagu project. The demand for properties under the scheme has not yet been completely satisfied since, at 30th June, 1964, there were still 152 eligible persons awaiting allocation of holdings.

Advances to Settlers

Although the principal efforts in land settlement since World War II have been made under the War Service Land Settlement Scheme, the State Government has also operated its own schemes to assist settlers by providing loans. The following table shows particulars of advances under various Acts to 30th June, 1964:

Advances to Settlers

Advances	Total Advances Made During 1963-64	Total Advances to 30th June, 1964	Balances Outstanding at 30th June, 1964	
			Number	Amount
	\$'000	\$'000		\$'000
Agricultural Bank—				
State Advances Act (including Rural Credits)	689	10,016	821	2,916
Commonwealth Re-establishment and Employment Act 1945 .. .. .	..	815	110	111
Primary Producers' Relief Act 1947 .. .. .	..	595	32	12
Minister for Agriculture—				
Soldier Settlers—Advances ..	20	2,060	204	98
Closer Settlers—Advances ..	28	336	53	314
Total	737	13,822	1,220	3,451

Details of the main forms of assistance now available to settlers are as follows:

The State Advances Act 1935

Under Part III of the Act, loans may be made to persons in rural industries for the purchase of farm properties, discharge of mortgage or for making improvements. Loans may be made for periods up to 30 years at an interest rate determined by the Treasurer. The rate during 1963-64 was five and three-quarter per cent. The present limit on any single advance is \$20,000.

Under Part IV of the Act (Short Term Rural Credits), loans may be made to persons engaged in prescribed rural industries for the purchase of stock, plant, seeds and manures and for other purposes considered necessary for carrying on their industry. There is no statutory limit to the amount which may be advanced to each applicant. Usual period of loans are: plant, 10 years; stock, 5 years; land development, 10-15 years; structural improvements, 20 years; working expenses, one to three years.

RURAL INDUSTRY

General

The predominating rural activity of some Australian States has been summarised, not very accurately, in short phrases such as: Queensland, "beef cattle, wool, and sugar"; N.S.W., "wheat and wool", etc. With Tasmania, no such convenient condensation is possible and if the phrase "apples and hops" comes to mind, it is only because these happen to be crops in which the State is the leading Australian producer. In actual fact, the Tasmanian rural economy is marked by a great diversity of activity and, even allowing for the special regional adaptations made necessary by soil, climate, terrain and altitude, there are many rural holdings which individually exhibit an extremely diverse range of activities.

In the early colonial days, Tasmania was actually famed as Australia's granary (because of its wheat) yet there is hardly any extensive area suitable for the large-scale mechanised farming as now practised in the continental wheat belt. At a later stage, the island acquired a reputation for potato growing, production in some years outstripping that of any other Australian State. The present pattern of farming puts far more emphasis on the rearing of livestock and on the increased production of wool, meat and dairy products; field crops now include vegetables for canning and freezing but the relatively large areas devoted to oats, green fodder and vegetables for stock fodder are indicative of an orientation towards livestock raising. The traditional "specialties", orchards and hop growing, are still important in the total picture but the major development in the years since World War II has been the rapid creation of large areas of sown and semi-improved pasture.

The next section deals with the early history of Tasmanian farming and emphasises the importance of wheat growing in the early colonial era.

Historical

In 1856 appeared the *Statistical Account of Van Diemen's Land or Tasmania* compiled by H. M. Hull from official records; the following extracts from this publication describe events in the colony when provision of food was undoubtedly the most urgent problem:

1804 February 19. Governor Collins landed in Sullivan's Cove from Port Phillip . . . 10s. an acre was charged for reaping wheat by the Convicts . . . Scurvy existed in the Settlement.

- 1805 Kangaroos were boiled down into Soup, and issued a quart at a time at the Colonial Hospital.
- 1806 Great scarcity of provisions. Grain prohibited from being used for brewing.
- 1807 Wheat crop failed.
- 1808 In July all the wheat and maize was gone, so 12 lb. of barley was issued. In August, the beef and pork were expended, so kangaroo meat was issued instead. In October the barley was all gone, so 1½ lb a week of rice was issued instead.
- 1809 In October all the grain was expended; 7 lb of kangaroo meat was issued instead. Seed wheat and barley issued in March and May to the Settlers on loan.
- 1811 Acres in wheat 1500.
- 1812 The *Cyclops* sailed for Sydney with a cargo of wheat grown in the Colony.

In the same publication appear farm statistics for the Tamar settlement in 1816 and the Derwent settlement in 1817. Records for the next year (1818) contain statistics for the whole colony as follows:

"Land in cultivation—Wheat, 5049 acres; barley, 214 ditto; peas and beans, 148½ ditto; potatoes, 268 ditto; total, 5679½ acres. Livestock in the colony—horses, 267; horned cattle, 12,356; sheep, 127,883."

The pattern of early agricultural development can be inferred from the following summary of official farm statistics:

Area Under Crops—Van Diemen's Land, 1818-1841
(Acres)

Year	Wheat	Barley	Oats	Peas	Beans	Pota- toes	Turnips	English Grasses	Tares	Total Crops
1818 ..	5,049	214	(a)	149		268	(a)	(a)	(a)	(b)
1828 ..	20,357	3,864	1,573	646	35	1,292	1,296	4,970	..	34,033
1838 ..	41,760	13,495	21,576	868	128	3,532	9,054	17,150	437	108,000
1841 ..	63,734	9,010	16,471	738	102	4,185	15,943	22,082	349	132,614

(a) Not reported.

(b) Not comparable.

Livestock statistics for the same period are summarised as follows:

Livestock—Van Diemen's Land, 1818-1841

Year	Horses	Horned Cattle	Sheep	Goats
1818	267	12,356	127,883	..
1828	2,034	84,476	553,698	708
1838	9,656	75,087	1,214,485	2,400
1841	12,000	90,498	1,167,737	2,630

Early Development—First Phase

Although the early colonists had come halfway round the globe, Tasmania's temperate climate allowed them to pursue a type of farming which was little different from that carried on in contemporary England—certainly the crops

grown were the same; however, the grazing of livestock on extensive bush-runs, the use of convict labour, the clearing of scrub and the occasional menace of the aborigine and bushranger were sufficient reminders that home lay 12,000 miles away.

Early farm development round the Derwent settlement occurred in what are now Hobart suburbs (New Town and Glenorchy) and further up-river at New Norfolk. The attraction of open plains and open forest country then drew settlers into the Coal River Valley (Richmond and Sorell), into the Midlands and parts of the East Coast. The Tamar settlers in the north first worked land on the plains around the site of Launceston, with early expansion to the Longford area and with grazing in the St. Leonards and White Hills districts; the Northern Midlands were also developed as farming country in this era.

As suggested by the previous table of areas, the principal crop was wheat. It is hard today to picture Tasmania as Australia's principal wheatgrower but, in 1842, the island colony with nearly 80,000 acres sown to this crop, outstripped N.S.W., W.A., Victoria and S.A. individually and contained nearly half the Australian wheat acreage. Throughout the 19th century, wheat was a principal cash crop, but eventually competition from the continental States (both in type and price) caused a decline, as shown in the following table:

Wheat for Grain—Area Under Crop and Total Production, Selected Years

Year	Area Under Crop	Production	Year	Area Under Crop	Production
	Acres	'000 bushels		Acres	'000 bushels
1860-61 ..	66,450	1,416	1930-31 ..	19,107	391
1870-71 ..	57,382	897	1940-41 ..	8,038	140
1880-81 ..	50,022	750	1945-46 (b) ..	4,982	67
1890-91 ..	32,452	643	1950-51 ..	5,318	95
1898-99 (a) ..	85,287	2,304	1960-61 ..	6,912	148
1900-01 ..	51,825	1,110	1963-64 ..	17,562	483
1910-11 ..	52,242	1,121	1964-65 ..	16,805	364
1920-21 ..	28,284	566			

(a) Peak production year.

(b) Record low production year.

As early as 1888, the Tasmanian Government Statistician, R. M. Johnston, deplored the fact that wheat and wheaten flour were being imported into Tasmania in increasing quantities: "To convert lands devoted to agriculture to pastoral purposes may be forced upon our farmers by the greatly reduced prices for wheat, &c. so far as a surplus for export is concerned; but surely the home market should be supplied by local agriculturists! It is certainly a great injury to the Colony to diminish in any way its agricultural areas in favour of pastoral pursuits, and thereby deprive the Colony of its agricultural population." Although, following this, production rose to a record level during the late 1890's, his warning failed to halt the eventual conversion of much wheat land to pastoral purposes.

The present position is that Tasmanian bread is made entirely from imported wheat and the home-grown product is used to make high quality biscuit flours for which it is peculiarly well suited.

Early Development—Second Phase

Before the 1850's, most farm land had been confined to the eastern half of the State where open plains and open forest country encouraged penetration. Further development, supported by the buoyant market during the Victorian

gold rush, required the clearing of more thickly timbered land, the principal attraction being the fertile chocolate-coloured volcanic soils of the North-West Coast; in the same decade, the discovery of the basalt lands in the Scottsdale-Ringarooma area was followed by settlement in the North-East.

Late in the 19th century, pioneers began to develop orchards, mainly for apples, in the thickly timbered country of the Huon, Tamar and lower Mersey Valleys. In the decade after Federation, annual apple production commenced to exceed one million bushels (as compared with the 1963-64 record crop of 8½ million bushels).

Because of the heavy clearing work necessary in the second phase of development (which lasted up till the First World War), it can appropriately be called the bush pioneering period.

Recent Development

Following World War I, the State fostered farming development through schemes for the settlement of returned soldiers, but this largely involved the acquisition and sub-division of existing properties, the only major conversion of virgin land being at Brittons Swamp on the North-West Coast. After World War II, soldier settlement and closer settlement schemes of a more ambitious nature were undertaken, the main areas of development being King and Flinders Islands, the Waterhouse and Tomahawk projects in the North-East and the reclamation of Montagu Swamp on the far North-West Coast. (Another project involved the sub-division of the Lawrenny estate in the Hamilton area of the Midlands.)

Rural Industry Statistics

Sources of Information

The statistics are, in the main, compiled from census returns of agricultural, pastoral and dairying production collected from rural holdings in Tasmania at 31st March each year. In conjunction with the general census, supplementary collections from farms are conducted where the harvesting of certain crops has not been completed by 31st March (e.g. apples, potatoes).

Additional information is also obtained from a number of entirely separate collections covering such data as slaughterings, meat production and dairy production and from various marketing and other authorities.

Period Covered

Data relating to area sown, production and number of holdings growing crops are, in general, for the season ended 31st March. In cases where harvesting has not been completed by 31st March (e.g. potatoes), total production is nevertheless collected and included in published figures. Livestock numbers also are reported at 31st March.

Rural Holdings

A "rural holding" is defined as a piece of land of one acre or more in extent, used for the production of agricultural products or for the raising of livestock and the production of livestock products. Care should be exercised in drawing conclusions from changes in the number of rural holdings over a series of years. There are many small sub-commercial holdings, a proportion being no more than large residential blocks with perhaps a small plot of potatoes or other crops, or carrying a house-cow or poultry. It is very difficult,

in some cases, to determine whether or not they should be regarded as rural holdings within the definition, and some variation in treatment over time has occurred.

Area of Crops

Total area of land sown or planted to crops is shown irrespective of whether the whole area was subsequently harvested or whether a portion or the whole of the crops failed and was not harvested. Where two *successive* crops are grown on the same land during the one season, the land is included twice in the area of crops.

Value of Production

The statistics in the following sections refer, in the main, to areas sown to crops and quantities produced. The value of the various crops is shown under "Value of Production" in Chapter 7.

Classification of Rural Holdings By Type of Activity

Because many Tasmanian holdings are devoted, in the main, to more than one specific type of farming activity, it is difficult to present, in summary form, the essential characteristics or structure of rural industry in the State today. Before considering in detail crop areas, production statistics and livestock numbers, it is logical to examine the "main line" of each farm and to determine what are the principal activities; from this study can be evolved a classification of holdings by type of activity. Details of such a study follow and from it emerges a general picture of Tasmanian farms as they were in 1960. There will have been minor changes since that year but the broad conclusions will still hold true today.

A classification of rural holdings by type of activity was undertaken in Tasmania in 1959-60 as part of the first Australia-wide classification of this type attempted.

Because of the large number of holdings on which more than one type of activity occurs, it was necessary to determine the principal activity before such holdings could be classified to particular types. Since it was desirable to exclude from the principal classification small sub-commercial holdings (generally operated only on part-time basis), it was also necessary to have some means of determining at what scale of operations holdings engaged in various activities could be considered as commercial propositions. The measuring of the importance of each type of activity was based on gross receipts at the farm (estimated from quantity details shown on the annual statistical returns together with price data from independent sources).

Holdings for which estimated farm gross receipts were less than \$1,200 were treated as "sub-commercial" and these, together with unused holdings, holdings used for intermittent grazing, and holdings attached to prisons, hospitals, &c. were not classified by type of farming activity. When these holdings had been eliminated, farms were classified according to the formulae that follow.

If a single activity accounted for 50 per cent or more of the total gross receipts, that activity determined the holding type. Where no single activity accounted for 50 per cent of the total gross receipts, the holdings were classified as "multi-purpose". Principal exceptions to this general rule were holdings reporting (i) sheep and cereal grains, and (ii) dairy cows and pigs. In the former case, the holding was treated as a composite sheep-cereal grain type if the combined receipts obtained from the two activities added to 75 per cent or

more of total gross receipts, so long as gross receipts from sheep were no more than four times and not less than one quarter of the gross receipts obtained from cereal grains. In the latter case, if the combined receipts obtained from dairying and pigs represented 50 per cent or more of total gross receipts, the holding was classified as dairying.

The following table provides details of the number of holdings classified to each type of activity in each Statistical Division:

Holdings Classified According to Type of Activity, 1959-60

Type of Holding	Statistical Division								Total
	South Central, North Central (a)	N.W.	N.E.	North Mid-land	Mid-land	S.E.	South-ern	West-ern	
Sheep-Cereal Grain ..	..	6	3	12	7	23	..	..	51
Sheep ..	5	355	336	405	403	407	71	1	1,983
Cereal Grain ..	..	2	..	1	..	2	..	..	5
Beef Cattle ..	..	96	34	5	1	3	12	2	153
Dairying ..	8	2,132	505	159	44	68	119	3	3,038
Fruitgrowing..	45	51	174	1	15	82	1,159	..	1,527
Vegetables—									
Potatoes ..	..	132	5	..	9	1	..	1	148
Other & Mixed	21	154	25	15	11	15	8	..	249
Poultry ..	8	19	19	13	2	5	17	1	84
Pigs ..	7	11	6	1	1	2	5	1	34
Other (One Main Purpose)	6	7	3	1	35	..	61	..	113
Multi-Purpose	5	409	63	89	50	73	54	..	743
Total "Classified" ..	105	3,374	1,173	702	578	681	1,506	9	8,128
Sub-Commercial	143	740	454	219	145	301	553	14	2,569
Unused, "Special", &c. ..	38	107	71	31	20	72	163	3	505
Total All Holdings	286	4,221	1,698	952	743	1,054	2,222	26	11,202

(a) Cities of Hobart, Launceston and Glenorchy.

Principal Activities

A number of interesting conclusions emerge from a consideration of "classified holdings" in the previous table: (i) the main activity of over 60 per cent of classified holdings is concerned with either cattle or sheep; (ii) cereal grain growing barely exists as a main activity and is principally carried out in conjunction with the grazing of sheep or cattle; (iii) three main types of holding, namely dairying, sheep and fruitgrowing in that order, account for over 80 per cent of classified holdings; (iv) nearly ten per cent of classified holdings must carry on at least three distinct activities, otherwise they could not be classified as "multi-purpose" in accordance with the 50 per cent formula prefacing the table; (v) dairying is clearly the major activity of the N.W. Statistical Division, fruitgrowing of the Southern Statistical Division but the importance of the Midland Statistical Division in sheep farming does not emerge since size of flocks is not covered in the table.

Size of Rural Holdings

A classification of rural holdings by size is carried out at irregular intervals, the last in 1960; the following table compares the size of holdings in selected years:

Classification of Rural Holdings by Size

Size of Holdings (Acres)	Number of Holdings		Area of Holdings (‘000 Acres)	
	1928	1960	1928	1960
Under 50	3,164	2,561	58	54
50 and Under 100	2,108	1,835	147	133
100 and Under 500	4,779	4,920	1,095	1,072
500 and Under 1,000	726	859	594	588
1,000 and Under 5,000	775	795	1,600	1,712
5,000 and Under 10,000	146	132	1,018	901
10,000 and Under 20,000	67	69	925	913
20,000 and Under 50,000	29	26	812	796
50,000 and Over	5	5	384	342
Total	11,799	11,202	6,633	6,511

Types of Farming Activity, 1963-64

At 31st March, 1964, there were 10,949 rural holdings (compared with 11,743 in 1955). The following table shows the number of holdings growing selected principal crops or carrying livestock; this gives some indication of farming activities but on a cruder basis than the earlier table since the same holding may be included more than once in the figures (in an extreme case, the one holding could be included eleven times):

Number of Holdings Growing Principal Crops or Carrying Livestock

Particulars	1954-55	1961-62	1962-63	1963-64
Holdings—				
Growing—				
Grain (a)—				
Barley	119	323	340	227
Oats	305	367	474	398
Wheat	114	222	243	251
Hops	84	104	106	108
Vegetables (b)—				
Potatoes	3,350	2,156	2,188	1,741
Onions	9	20	11	20
Fruit (b)—				
Orchard	1,808	1,382	1,383	1,358
Small Fruit	678	533	526	528
Carrying—				
Cattle	9,668	8,825	8,671	8,547
Sheep	5,270	5,675	5,415	5,255
Pigs	4,235	3,593	3,350	3,304
Total Rural Holdings (c) ..	11,743	11,117	10,974	10,949

(a) Twenty acres and over.

(b) One acre and over.

(c) Not the sum of figures above, since the one holding may be included more than once.

It should be noted that a fall in the number of holdings engaged in a particular activity does not necessarily involve decreased total activity. For example, holdings carrying cattle have decreased over the last ten years, whereas cattle numbers have shown a 41 per cent increase in the same period; on the other hand, the decline in holdings growing potatoes in the decade ended 1963-64 has been matched by an actual fall in acreage of potato crops and in production.

Land Utilisation on Rural Holdings

Rural holdings at present occupy over 37 per cent of Tasmania's total area which is 16,885,000 acres; details of utilisation follow:

Land Utilisation on Rural Holdings (Acres)

Particulars	1954-55	1961-62	1962-63	1963-64
Area Used for Crops (a)	325,903	382,994	408,128	391,182
Land Lying Fallow (b)	66,763	72,866	73,823	78,286
Sown Pasture Grazed (c)	897,707	1,255,743	1,273,774	1,363,155
Other Land Used for Grazing	3,631,806	3,274,002	3,204,078	3,106,738
Balance of Holdings	1,681,678	1,565,298	1,462,911	1,438,131
Total Area of All Holdings	6,603,857	6,550,903	6,422,714	6,377,492

(a) Includes area of sown pasture *cut* for hay, seed, silage or green fodder; includes also orchards and small fruits.

(b) Excludes short or summer fallow.

(c) Excludes area *cut* for hay, seed, silage or green fodder.

Definition of "Crops"

As defined in the previous table, crops are produced not only from cultivated fields and orcharding land but also from sown pasture if its growth is *cut* for hay, seed, silage or green fodder. The following table shows the total area of crops on this basis when double-cropping is taken into account:

Total Area of Crops (Acres)

Particulars	1954-55	1961-62	1962-63	1963-64
Area Used for Crops (a)	325,903	382,994	408,128	391,182
Area Double Cropped	133	2,761	4,893	3,732
Total Area of Crops	326,036	385,755	413,021	394,914

(a) First item in table on Land Utilisation on Rural Holdings.

Definition of "Sown Pasture"

Sown pasture is defined in these statistics as "clovers and grasses (other than native)." The next table shows the total area of sown pasture and distinguishes between areas *cut* for various purposes and areas simply grazed:

**Sown Pasture—Classification of Total Area
(Acres)**

Particulars of Usage	1954-55	1961-62	1962-63	1963-64
Clover for Seed	1,171	963	1,497	881
Grass for Seed	1,966	2,855	3,797	2,853
Clover and Grasses Cut—				
For Hay	67,694	135,561	150,121	128,525
For Silage and Green Fodder	25,395	21,526	18,334	15,116
Total "Under Crop" ..	96,226	160,905	173,749	147,375
Clover and Grasses Grazed (Not Cut)	897,707	1,255,743	1,273,774	1,363,155
Total Sown Pasture ..	993,933	1,416,648	1,447,523	1,510,530

The distribution in Statistical Divisions of sown pasture (1963-64) is given in acres: N.W., 459,074; Midland, 301,563; N.E., 300,389; North Midland, 214,481; S.E., 160,802; Southern, 70,221; remainder of State, 4,000.

Trend in Land Utilisation

The total area of rural holdings is still approximately the same as it was at the end of World War I. The most striking change is the rapid development of sown pasture, the previous table showing a 52 per cent increase in the decade ending 1963-64. Twenty years ago (1944-45), the area of sown pasture was under 500,000 acres, it passed 1,000,000 acres in 1955-56 and reached 1,500,000 acres in 1963-64. A similar marked increase has occurred in the area of sown pasture *cut* for hay, seed, silage or green fodder and since this is, for the purpose of these statistics, a component of the area used for crops, variations in crop areas are affected by this factor.

In actual fact, the area of land under the plough is slightly less than it was fifty years ago but this does not indicate a decline in activity but rather a change in the farming pattern; grain crops are no longer the dominant item and many primary producers, through their development of sown pasture, have become grassland farmers with the mower and pick-up baler as their main "harvesting" machines (as opposed to the reaper and binder on ploughed fields). The trend to grassland farming has meant greatly increased capacity to carry stock, the numbers of both sheep and cattle having more than doubled since World War I. (In the decade ending 1963-64, sheep have increased from 2.6 million to 3.6 million; cattle from 319,000 to 450,000. The percentage increases for the ten-year period are: sheep, 39 per cent; cattle, 41 per cent.)

Temporary and Permanent Pasture

It should be noted that some of the areas included as sown pasture are "temporary" in the sense that they may be put under crop after some years of use for grazing. In the same sense, specific areas used for crops in any year are also "temporary" since they may later be converted to sown pasture. This rotational pattern, characteristic of much of Tasmania's mixed farming, obviously is designed to maintain soil fertility at a high level and to guard against the soil exhaustion associated with the earlier era of intense cultivation of cash crops. "Ley" farming is the technical term for this rotational method.

In the sowing of temporary pastures, the main grasses and clovers used are: ryegrass (perennial, Italian and hybrid) and red clover. Permanent pastures are based on perennial ryegrass and white clover with *phalaris tuberosa* and subterranean clover especially suitable for the drier regions and cocksfoot in the wetter.

Tasmania's capacity for extending the area of sown pasture is certainly not yet exhausted since, in 1963-64, the area under sown pasture (1.5 million acres) was still less than half the area of "other land used for grazing" (3.1 million acres).

Agriculture

Sufficient has been said on land utilisation to emphasise the trend to grass-land farming. In the summary table below showing the area devoted to the principal crop types, the area of improved pasture *cut* for hay, seed, silage or green fodder is attributed to the appropriate crop, e.g. as a component of hay and green fodder areas.

Area of Principal Crops—Summary
(Acres)

Crop	1954-55	1961-62	1962-63	1963-64
Cereals for Grain	37,534	61,773	66,344	61,818
Hay	96,496	157,238	165,442	149,640
Green Fodder	96,340	78,526	83,274	86,120
Field Peas (Blue, Grey and Other)	14,501	8,101	9,459	10,982
Vegetables for Stock Fodder ..	18,684	23,740	28,447	31,785
Grass Seed	3,140	3,818	5,297	3,734
Industrial Crops (Hops and Mustard)	1,958	1,852	1,938	1,896
Vegetables for Human Consumption	32,763	27,141	29,047	25,294
Orchard Fruit	21,142	19,641	19,759	19,975
Small Fruit	2,545	2,218	2,184	2,159
All Other Crops	933	1,707	1,830	1,511
Total Area of Crops ..	326,036	385,755	413,021	394,914

Details of individual crops, their area, production and yield per acre, are shown in the next table:

Crops—Area, Production and Yield Per Acre

Crop and Unit of Quantity		Average, Ten Years Ended 1962-63			Year 1963-64		
		Area (Acres)	Production		Area (Acres)	Production	
			Total	Yield Per Acre		Total	Yield Per Acre
CEREALS FOR GRAIN							
Barley	(bushels)	11,401	348,752	30.59	13,790	414,230	30.04
Oats	(bushels)	23,431	500,360	21.35	30,344	843,643	27.80
Rye	(bushels)	495	7,823	15.80	122	2,549	20.89
Wheat	(bushels)	8,552	205,015	23.97	17,562	482,757	27.49
HAY							
Grass & Clover	(tons)	114,365	214,093	1.87	128,525	209,625	1.63
Oaten	(tons)	17,762	32,952	1.86	19,233	36,321	1.89
Other	(tons)	4,300	8,135	1.89	1,882	3,230	1.72
GRASS SEED							
Clover	(cwt)	1,194	848	0.71	881	483	0.55
Lucerne	(cwt)	13	12	0.97	..	..	..
Other (<i>b</i>)	(cwt)	2,694	4,526	1.68	2,853	6,878	2.12

Crops—Area, Production and Yield Per Acre—continued

Crop and Unit of Quantity	Average, Ten Years Ended 1962-63			1963-64		
	Area (Acres)	Production		Area (Acres)	Production	
		Total	Yield Per Acre		Total	Yield Per Acre
FIELD PEAS						
Blue (bushels)	5,076	109,098	21.49	5,157	98,939	19.19
Grey & Other (,,)	6,664	126,362	18.96	5,825	87,594	15.04
VEGETABLES FOR STOCK FODDER						
Horse Beans (bush)	557	13,537	24.29	714	15,128	21.19
Turnips—Swede and White (tons)	19,502	(a)	(a)	30,605	(a)	(a)
Other	198	..	..	466	..	..
INDUSTRIAL CROPS						
Hops (c) (lb)	1,387	2,801,617	2,019	1,462	1,579,560	1,080
Mustard (lb)	404	164,003	406	347	117,623	339
VEGETABLES FOR HUMAN CONSUMPTION						
Beans, French and Runner ('000 lb)	203	1,118	5.496	495	3,495	7.061
Peas, Green (d)—						
For Processing (,,)	7,562	17,676	2.272	11,884	32,757	2.729
Sold in Pod (,,)	370	342		186	187	
Potatoes (tons)	18,995	89,148	4.69	10,806	66,420	6.15
Turnips—Swede and White (tons)	1,370	8,926	6.52	649	4,061	6.26
Other Vegetables ..	1,303	..	..	1,274	..	..
ORCHARD FRUIT						
Bearing—						
Apples (bushels)	16,470	5,643,130	343	15,545	8,545,000	550
Apricots (bushels)	720	60,274	84	456	36,000	79
Pears (bushels)	1,507	452,122	300	1,460	625,000	428
Plums & Prunes (,,)	114	21,745	191	76	16,400	216
Other	122	..	..	92	..	..
Non-bearing Areas	1,647	..	..	2,346	..	..
SMALL FRUIT						
Bearing—						
Currants (Black & Red) (lb)	882	2,848,330	3,228	978	2,955,000	3,021
Gooseberries (lb)	47	351,835	7,486	32	347,000	10,844
Loganberries (lb)	205	1,286,430	6,278	166	977,000	5,886
Raspberries (lb)	1,035	4,871,620	4,708	753	3,841,000	5,101
Strawberries (lb)	86	354,100	4,108	80	175,000	2,188
Non-bearing Areas	183	..	..	150	..	..

(a) Not available.

(b) Production includes seed harvested from areas sown to oats for grain; this seed is excluded from the average yield figures.

(c) Non-bearing area excluded; production expressed in dry weight.

(d) Ex-shell weight.

Summary of Principal Crops

The following table summarises the area of selected principal crops and gives details of production for recent years:

Selected Principal Crops—Area and Production

Crop	1954-55	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
AREA (ACRES)							
Barley for Grain ..	7,256	9,333	12,396	15,330	18,728	19,751	13,790
Oats for Grain ..	22,621	22,199	22,017	23,350	26,953	31,104	30,344
Wheat for Grain ..	7,302	6,438	8,264	6,912	15,568	15,340	17,562
Hay	96,496	153,822	126,544	171,012	157,238	165,442	149,640
Field Peas	14,501	8,505	10,878	8,039	8,101	9,459	10,982
Grass Seed	3,140	4,085	2,446	5,139	3,818	5,297	3,734
Hops—Bearing ..	1,331	1,430	1,436	1,406	1,411	1,452	1,462
Peas, Green—							
For Processing ..	3,103	7,145	7,872	10,003	12,823	12,684	11,884
Sold in Pod	502	334	247	162	139	144	186
Potatoes	26,209	16,186	15,525	10,875	11,129	13,839	10,806
Bearing—							
Apples	17,025	16,435	16,083	15,825	15,417	15,489	15,545
Pears	1,592	1,476	1,460	1,451	1,471	1,454	1,460
Currants (Black & Red)	892	817	844	916	902	946	978
Loganberries ..	235	212	222	210	162	173	166
Raspberries ..	1,200	1,024	992	853	838	753	753
Strawberries ..	74	85	86	55	72	91	80
PRODUCTION							
Barley for Grain (bushels)	199,793	294,634	418,502	344,137	606,927	630,966	414,230
Oats for Grain (bushels)	451,659	490,633	511,796	391,285	587,183	827,508	843,643
Wheat for Grain (bushels)	158,605	163,660	181,728	148,128	345,111	418,921	482,757
Hay (tons)	157,960	302,075	221,227	325,974	285,390	313,004	249,176
Field Peas (bushels)	267,612	174,256	223,989	92,032	180,421	193,494	186,533
Grass Seed (cwt)	3,493	7,800	3,161	7,972	4,757	10,549	7,361
Hops .. ('000 lb)	2,983	3,384	2,800	2,819	2,837	2,862	1,580
Peas, Green—							
For Processing ('000 lb)	7,093	14,645	20,725	14,281	37,479	32,986	32,757
Sold in Pod ('000 lb)	455	387	324	152	161	138	187
Potatoes (tons)	101,000	85,900	98,000	39,050	71,560	82,545	66,420
Apples ('000 bushels)	5,009	4,983	5,473	5,594	7,844	6,262	8,545
Pears ('000 bushels)	426	433	463	461	566	415	625
Currants (Black and Red)							
('000 lb)	2,482	3,337	2,966	3,097	2,197	3,082	2,955
Loganberries ('000 lb)	1,150	1,528	1,526	1,196	1,431	1,188	977
Raspberries ('000 lb)	5,022	5,535	5,254	3,291	4,816	3,468	3,841
Strawberries ('000 lb)	253	487	367	172	275	370	175

Principal Crops

The data on acreage and production of crops are compiled, in general, to give totals for each municipality. In subsequent parts of this chapter dealing with geographical distribution, the information is presented only in Statistical Divisions; however, the component attributable to the South Central, North Central and Western Divisions is usually so small in relation to the State total that these three Divisions have been combined and described as "Rest of State". (The three combined Divisions include the Cities of Hobart, Glenorchy and Launceston, and the West Coast where mining is the predominant activity.)

Cereals for Grain

The next table shows the geographical distribution of cereal grain growing for 1963-64:

Cereals for Grain—Area of Crops in Statistical Divisions, 1963-64
(Acres)

Cereals for Grain	N.W.	N.E.	North Midland	Midland	S.E.	Southern	Rest of State	Total
Barley ..	6,262	1,629	2,233	757	2,633	199	77	13,790
Oats ..	1,397	1,964	12,472	10,753	3,332	426	..	30,344
Rye ..	4	16	10	55	37	..	..	122
Wheat ..	2,618	704	5,021	5,299	3,825	77	18	17,562
Total ..	10,281	4,313	19,736	16,864	9,827	702	95	61,818

The area for grain under barley, oats and wheat has tended to increase in recent years, 1954-55 total grain acreage being barley, 7,256; oats, 22,621; wheat, 7,302.

Hay and Green Fodder

The following table shows the geographical distribution of hay and green fodder crops for 1963-64:

Hay and Green Fodder—Area of Crops in Statistical Divisions, 1963-64
(Acres)

Crop	N.W.	N.E.	North Midland	Midland	S.E.	Southern	Rest of State	Total
Hay—								
Grass & Clover	65,218	24,767	22,020	5,369	4,843	5,872	436	128,525
Oaten ..	7,111	1,820	4,604	2,549	2,684	439	26	19,233
Other ..	324	282	159	424	553	140	..	1,882
Total Hay	72,653	26,869	26,783	8,342	8,080	6,451	462	149,640
Green Fodder	26,129	14,160	13,891	20,749	8,424	2,635	132	86,120

The primacy of the North West Division in acreage under hay and green fodder can be related to the fact that it carries more than 50 per cent of the State's cattle and is the principal dairying area.

The chief sources of green fodder are areas sown to oats (usually about 50 per cent of total green fodder acreage), and areas of grasses and clovers cut from sown pasture (17 per cent in 1963-64); other green fodder crops are obtained from chou moellier, barley, lucerne, millet, rape, ryecorn and wheat.

Vegetables for Human Consumption

As previous acreage and production tables indicated, there has been a decline in potato growing; the next table traces the history of this crop over the last 100 years:

Potatoes—Area Under Crop and Total Production, Selected Years

Year	Area	Production		Year	Area	Production	
		Total	Yield Per Acre			Total	Yield Per Acre
	Acres	Tons	Tons		Acres	Tons	Tons
1860-61 ..	7,621	33,589	4.41	1930-31 ..	37,229	95,289	2.56
1870-71 ..	9,823	36,028	3.41	1940-41 ..	37,364	114,041	3.05
1880-81 ..	10,421	32,548	3.12	1944-45 (a)	81,092	345,232	4.26
1890-91 ..	20,133	73,158	3.63	1950-51 ..	31,581	124,000	3.93
1900-01 ..	23,068	93,862	4.07	1960-61 ..	10,875	39,050	3.59
1910-11 ..	26,230	70,090	2.67	1963-64 ..	10,806	65,000	6.15
1920-21 ..	32,000	88,679	2.77	1964-65 ..	9,393	57,000	6.07

(a) Peak acreage and production year.

Potato growing was for many years a major activity in the N.W. Statistical Division and even in 1963-64, approximately 80 per cent of the acreage and production of the State's potato crop was located in that area. The decline in this export crop has been largely offset by increased opportunities for disposing of other vegetable crops to dehydrating, canning and deep-freezing plants developed on the North-West coast and in the Scottsdale area since World War II. The main crop now grown for processing is green peas, their area in 1963-64 exceeding the area planted to potatoes (12,070 acres as against 10,806 acres); a demand by processing plants also exists for other vegetables including french and runner beans, asparagus, beetroot, cabbages, cauliflowers, carrots, celery, broccoli, blue peas, parsnips, turnips, onions, tomatoes and potatoes.

The concentration of vegetable growing in certain areas of the State is illustrated in the following table which has been restricted to three selected crops:

Vegetables for Sale for Human Consumption (a)
Area Under Selected Crops in Statistical Divisions, Season 1963-64
(Acres)

Crop	N.W.	N.E.	North Midland	Midland	S.E.	Southern	Rest of State	Total
Beans, French and Runner	429	45	6	..	..	6	9	495
Peas, Green ..	8,423	989	2,538	8	56	26	30	12,070
Potatoes ..	8,429	971	106	661	318	260	61	10,806
All Other Veg- etables ..	690	517	61	44	225	175	211	1,923
Total ..	17,971	2,522	2,711	713	599	467	311	25,294

(a) Includes vegetables for processing.

Grass Seed

The geographical distribution (in acres) of areas yielding grass seed in 1963-64 was as follows: N.W., 776; N.E., 577; N. Midland, 1,776; Midland, 412; S.E., 171; Southern, 22; total, 3,734.

Field Peas and Vegetables for Stock Fodder

The geographical distribution of these crops in 1963-64 is shown as follows:

**Field Peas and Vegetables for Stock Fodder—Area of Crops in Statistical
Divisions, 1963-64
(Acres)**

Crop	N.W.	N.E.	North Midland	Midland	S.E.	Southern	Rest of State	Total
Field Peas—								
Blue ..	1,636	229	3,132	73	87	..	..	5,157
Grey and								
Other ..	1,357	492	2,448	285	1,238	5	..	5,825
Vegetables for Stock Fodder—								
Horse Beans	355	73	80	..	206	..	..	714
Turnips ..	14,737	6,030	2,130	4,653	1,858	1,136	61	30,605
Other ..	333	45	19	20	..	47	2	466

Hops

The principal industrial crop is hops grown mainly in the Derwent Valley, with most production in the Southern Statistical Division, and, across the Derwent, in the Midland Division. In 1963-64, the State's hop-bearing area was 1,462 acres. Hop growing is now being developed in other parts of the State.

In the production of hops in Australia, Tasmania has for many years been the principal grower; the crop is mainly used in brewing beer.

Orchard Fruit and Small Fruit

The geographical distribution of orchards and small fruit areas is shown below for 1963-64 :

**Orchard Fruit and Small Fruit—Area (Bearing & Non-Bearing) in
Statistical Divisions, 1963-64
(Acres)**

Fruit	N.W.	N.E.	North Midland	Midland	S.E.	Southern	Rest of State	Total
Orchard Fruit	947	3,594	6	5	1,106	14,123	194	19,975
Small Fruit ..	14	8	1	282	39	1,706	109	2,159

Orcharding is heavily concentrated in the Derwent and Huon Valleys (Southern Statistical Division); the other main area is in the Tamar Valley (N.E. Division). Small-fruit growing is almost entirely confined to the Derwent Valley and the Huon Valley.

On the average over recent years, the value of the apple crop alone has represented one third of the value of the State's total agricultural production. The next table gives recent details of area, production and average yield:

Apples—Area and Production

Year	Area		Number of Trees		Production		
	Bearing	Non-Bearing	Bearing	Non-Bearing	Total	Yield	
						Per Acre	Per Tree
	Acres	Acres	'000	'000	'000 bush.	Bushels	Bushels
1959-60	16,083	1,650	2,290	234	5,473	340	2.39
1960-61	15,825	1,726	2,308	252	5,594	353	2.42
1961-62	15,417	1,837	2,264	270	7,844	509	3.46
1962-63	15,489	1,894	2,277	278	6,262	404	2.75
1963-64	15,545	2,076	2,305	308	8,545	550	3.71
1964-65	15,532	2,543	2,310	378	6,207	400	2.70

Just after World War I, apple orchards had a bearing area of more than 26,000 acres; although this record area has since steadily declined, production is considerably higher due to increases in average yield. The following couplets show the highest and lowest average annual yields in each decade: ten years ended 1929-30, 185 and 74 bushels per acre; ten years ended 1939-40, 266 and 159; ten years ended 1949-50, 396 and 133; ten years ended 1959-60, 395 and 204; present incomplete decade, 550 and 353.

From the aspect of return to growers, the three most important orchard crops are apples, pears and apricots in that order although cherries, nectarines, peaches, plums and quinces are also grown.

Small fruit growing is occupying very much smaller areas than previously and there has been a drastic decline in production, as shown in the following table:

Principal Small Fruits—Area and Production

Year	Currants (Black & Red)		Gooseberries		Raspberries		Strawberries	
	Bearing Area	Pro-duction	Bearing Area	Pro-duction	Bearing Area	Pro-duction	Bearing Area	Pro-duction
	Acres	'000 lb	Acres	'000 lb	Acres	'000 lb	Acres	'000 lb
1948-49 (a) ..	2,006	6,030	209	1,632	2,086	7,603	250	871
1959-60 ..	844	2,966	39	356	992	5,254	86	367
1960-61 ..	916	3,097	35	389	853	3,291	55	172
1961-62 ..	902	2,197	37	356	838	4,816	72	275
1962-63 ..	946	3,082	39	314	753	3,468	91	370
1963-64 ..	978	2,955	32	347	753	3,841	80	175
1964-65 ..	875	2,300	35	241	703	3,374	70	317

(a) Representative year from period when small fruit areas were at record level.

"All Other Crops"

In the table "Area of Principal Crops" appears an item "All other crops", (1,511 acres in 1963-64). These crops, not specified in previous tables, include lavender, flower seeds, cut flowers, a variety of crops grown for seed, and green manure crops (e.g. lupins).

LIVESTOCK

Introduction

This subject is dealt with in two parts:

- (i) Number of Livestock on Rural Holdings;
- (ii) Livestock Products.

The first part needs no definition but the second part (livestock products) requires explanation. In relation to the various types of livestock, the following products are included:

Cattle — meat, milk, butter, cheese.

Sheep — meat, wool.

Pigs — meat.

Poultry — meat, eggs.

It should be noted that some of these products (e.g. butter and cheese) are made, in the main, in establishments classified as factories. From a theoretical point of view, it can therefore be correctly argued that some livestock products are attributable to secondary, rather than primary, industry; it is nevertheless impossible to describe adequately the pattern and scale of livestock farming without giving details of these basic products.

Number of Livestock on Rural Holdings

The following summary table shows the numbers of livestock on rural holdings over a period of 100 years:

Livestock on Rural Holdings—Selected Years

Year	Horses	Cattle	Sheep	Pigs
	No.	No.	'000	No.
1860 (a)	21,034	83,366	1,701	31,290
1870 (a)	22,679	101,459	1,350	49,432
1880 (a)	25,267	127,187	1,794	48,029
1890 (a)	31,165	162,440	1,619	81,716
1900 (a)	31,607	165,516	1,684	68,291
1910 (a)	41,388	201,854	1,788	63,715
1919-20 (a)	39,452	214,442	1,781	35,530
1929-30 (b)	34,336	214,643	2,091	52,899
1939-40 (b)	29,605	252,484	2,677	44,941
1949-50 (c)	21,197	274,740	2,170	35,841
1959-60 (c)	10,512	375,342	3,494	67,118
1963-64 (c)	7,638	449,998	3,600	82,534
1963-64—Tasmanian numbers as proportion of Australian total ..	1.4 per cent	2.4 per cent	2.2 per cent	5.6 per cent

(a) At varying dates.

(b) At 31st December.

(c) At 31st March.

Cattle

Classification

A desirable way of classifying cattle is to distinguish between "dairy" and "beef" cattle, but there is a possibility of confusion since the definition of

these terms may be based either on *purpose* or on *breed*. Such a classification presents no difficulty to farmers in the following categories:

- (i) running a dairy herd only, for milk only, with all cattle of recognised dairy breeds;
- (ii) running a beef herd only, for meat only, with all cattle of recognised beef breeds.

It is also apparent that the above two cases are not representative of all holdings and the following cases are frequently encountered:

- (i) herds wholly of dairy breeds used for milk production; from these, culled cows and heifers and some calves are fattened for slaughter;
- (ii) composite herds (i.e. with dairy-breed cows and heifers kept for milk production and with some dairy-breed and/or dairy-beef cross cows and heifers for vealer production).

As from 1942-43, the annual census questions on cattle were amended to require a dissection between "beef" and "dairy" but the terms were not defined as relating to either purpose or breed. The following table summarises cattle numbers in terms of this classification from 1942-43 to 1962-63 (when it ceased):

Number of Cattle on Rural Holdings—Dairy and Beef Classification

31st March	Dairy	Beef	31st March	Dairy	Beef	31st March	Dairy	Beef
1943	142,946	101,735	1950	157,959	116,781	1957	195,894	158,276
1944	128,775	101,352	1951	157,024	114,760	1958	204,773	166,636
1945	128,066	96,602	1952	155,536	110,727	1959	203,482	170,842
1946	126,167	90,139	1953	162,212	112,919	1960	206,770	168,572
1947	132,265	87,854	1954	173,595	121,583	1961	214,382	179,826
1948	144,041	100,066	1955	189,711	129,706	1962	228,637	196,514
1949	155,122	111,297	1956	183,602	147,987	1963	238,084	205,519

The geographical distribution of cattle in the last year of the "dairy and beef" classification was as follows:

Cattle on Rural Holdings—Distribution in Statistical Divisions, 31st March, 1963

Particulars	N.W.	N.E.	North Midland	Midland	S.E.	Southern	Rest of State	Total
Dairy ..	156,780	39,346	18,620	5,894	6,102	10,410	932	238,084
Beef ..	73,793	44,498	26,174	33,428	13,502	13,009	1,115	205,519
Total ..	230,573	83,844	44,794	39,322	19,604	23,419	2,047	443,603

In the 1963-64 annual census, the questions on cattle were amended to introduce the following principles:

- (i) Bulls to be classified according to breed (i.e. dairy or beef breed).
- (ii) All other cattle to be classified according to purpose (i.e. milk production or meat production).
- (iii) The number of "house" cows to be established (i.e. cows and heifers being kept primarily for the owner's own milk supply).

The results obtained from the two differing methods of approach are illustrated by showing, in total, the answers to questions asked in 1962-63 and 1963-64:

Description of Cattle on Rural Holdings

(1) 31ST MARCH, 1963

CATTLE At 31st March, 1963	Dairy—		
	Dairy Cows (in milk and dry)	141,255	
	Heifers 1 year and over (for dairying)	40,045	
	Calves (under 1 year)—Heifer calves	42,724	
	Other calves	9,539	
	Bulls, 1 year and over	4,521	
	Total Number of Dairy Cattle	238,084	
	Beef—		
	Cows (including heifers), 1 year and over	88,923	
	Calves, under 1 year	70,120	
	Bulls, 1 year and over	4,423	
	Other (including Speyed Cows, Bullocks, etc.)	42,053	
	Total Number of Beef Cattle	205,519	
	Total Number of all Cattle (Dairy and Beef)	443,603	

(2) 31ST MARCH, 1964

CATTLE and CALVES Number at 31st March, 1964	BULLS used or intended FOR SERVICE	Bulls (1 year and over)—Dairy Breeds Beef Breeds Bull Calves (under 1 year)	4,141 3,984 4,195
	COWS AND HEIFERS used or intended for production (for sale) of MILK AND CREAM	Cows—In Milk and Dry at 31st March Heifers (1 year and over) Heifer Calves (under 1 year)	140,425 39,928 43,082
	HOUSE COWS (in milk and dry) and HEIFERS (one year and over) being kept primarily for own milk supply		6,545
	OTHER CATTLE AND CALVES (not included above) i.e. mainly for MEAT PRODUCTION	Cows and Heifers (1 year and over) Calves (under 1 year) including Vealers Other (1 year and over) i.e. Steers, Bullocks, &c... .. .	89,292 75,108 43,298
	Total Cattle and Calves for all Purposes		449,998

The previous change in classification makes it impossible to compare, in full detail, the description of cattle in 1963-64 and subsequent years with descriptions reported in previous years but the following table is compiled to show broad groups regarded as generally comparable:

Description of Cattle on Rural Holdings

At 31st March	Number of Holdings with Cattle	Bulls (1 yr. & over)	Cows and Heifers (1 yr. & over)	Calves (Under 1 yr.)	Other Cattle	Total Cattle
1950	9,759	6,186	158,424	60,601	49,529	274,740
1955	9,668	7,002	194,016	78,252	40,147	319,417
1960	9,031	7,237	229,162	100,849	38,094	375,342
1961	8,868	7,639	238,329	107,975	40,265	394,208
1962	8,825	8,668	256,342	118,614	41,527	425,151
1963	8,671	8,944	270,223	122,383	42,053	443,603
1964	8,547	(a) 8,125	276,190	122,385	43,298	449,998
1965	8,384	(a) 8,311	283,955	119,455	39,750	451,471

(a) The specification of "Bull Calves (under 1 year)" from 1963-64 may have affected the comparability of this figure.

The distribution of holdings with cattle in 1963-64 is shown below:

Cattle on Rural Holdings in Statistical Divisions, 31st March, 1964

Particulars	N.W.	N.E.	North Mid-land	Mid-land	S.E.	South-ern	Rest of State	Total
Holdings with Cattle	3,679	1,387	749	556	665	1,390	121	8,547
Total Cattle (All Descriptions) ..	232,339	89,826	44,729	39,233	18,165	23,583	2,123	449,998
Cows in Milk and Dry (a)	96,140	24,134	9,968	2,424	2,383	5,059	317	140,425
Heifers (1 year and over) (a)	26,433	6,654	3,329	755	907	1,690	160	39,928
Heifer Calves (under 1 year) (a) ..	29,482	7,350	3,307	589	842	1,409	103	43,082
Bulls (1 yr. and over)—								
Dairy Breeds ..	2,642	705	330	90	121	229	24	4,141
Beef Breeds ..	1,246	828	646	663	255	319	27	3,984

(a) "Cows and heifers used or intended for production (for sale) of milk and cream".

Breeds of Cattle

The main breeds of dairy cattle in Tasmania are Jersey, Ayrshire, milking Shorthorn, Friesian and Guernsey, while beef breeds are Hereford, Devon, Aberdeen Angus and Shorthorn.

Sheep

The table below indicates the increase in sheep since the end of World War II:

Sheep on Rural Holdings At 31st March ('000)

Year	Sheep	Year	Sheep	Year	Sheep	Year	Sheep
1945 ..	2,156	1951 ..	2,182	1957 ..	2,943	1963 ..	3,570
1946 ..	1,926	1952 ..	2,338	1958 ..	3,298	1964 ..	3,600
1947 ..	1,933	1953 ..	2,422	1959 ..	3,536	1965 ..	3,793
1948 ..	2,087	1954 ..	2,465	1960 ..	3,494		
1949 ..	2,160	1955 ..	2,595	1961 ..	3,439		
1950 ..	2,170	1956 ..	2,673	1962 ..	3,532		

The next table shows the geographical distribution of sheep in 1963-64, also the various descriptions and the outcome of the lambing season:

Description of Sheep at 31st March, 1964, in Statistical Divisions

Particulars	N.W.	N.E.	North Mid-land	Midland	S.E.	South-ern	Rest of State	Total
Holdings with Sheep	1,661	931	735	646	784	461	37	5,255
Sheep—								
Rams (1 year and over)	6,981	6,195	10,034	10,758	5,538	1,060	118	40,684
Breeding Ewes ..	257,205	257,070	349,697	407,314	244,378	49,647	1,621	1,566,932
Other Ewes (1 year and over) ..	15,850	26,269	40,799	68,663	32,733	7,847	749	192,910
Wethers (1 year and over) ..	52,297	144,033	159,297	335,598	163,852	33,949	1,130	890,156
Lambs and Hoggets (under one year) ..	130,341	135,087	193,289	280,391	145,255	23,926	1,323	909,612
Total Sheep and Lambs ..	462,674	568,654	753,116	1,102,724	591,756	116,429	4,941	3,600,294
Lambing, Season 1963—								
Ewes Mated ..	255,642	222,814	327,177	383,124	223,582	43,628	1,727	1,457,694
Lambs Marked—								
Number ..	254,702	202,618	300,024	349,109	206,714	38,621	1,568	1,353,356
As Percentage of Ewes Mated	99.6	90.9	91.7	91.1	92.5	88.5	90.8	92.8

The following table summarises the description of sheep on a State basis since 1955 and also gives details of lambing:

Description of Sheep and Details of Lambing—Summary

Particulars	1955	1960	1961	1962	1963	1964	1965
Holdings with Sheep (No.)	5,276	5,950	5,764	5,675	5,415	5,255	5,114
Sheep ('000)—							
Rams (1 year and over)	29	41	42	43	42	41	43
Breeding Ewes ..	1,077	1,520	1,552	1,548	1,608	1,567	1,739
Other Ewes (1 year and over) ..	177	235	200	208	195	193	157
Wethers (1 year and over) ..	647	860	850	848	886	890	943
Lambs and Hoggets (under one year) ..	665	838	795	885	839	909	910
Total Sheep and Lambs	2,595	3,494	3,439	3,532	3,570	3,600	3,792
Lambing (a)—							
Ewes Mated .. ('000)	968	1,461	1,378	1,440	1,419	1,458	1,478
Lambs Marked—							
Number .. ('000)	884	1,354	1,267	1,368	1,310	1,353	1,374
As Percentage of Ewes Mated (%)	91.35	92.68	91.94	95.00	92.28	92.84	93.00

(a) In the season preceding the year named.

Breeds of Sheep

Over the last ten years, the breeds of sheep reported by growers have shown a marked trend in favour of Polwarths with a slight relative decline in Merinos and a greater decline in Comebacks and Crossbreds. The following table shows the percentage of the main breeds of sheep (including rams) since 1955:

Proportion of Breeds of Sheep at 31st March
(Per Cent)

Breed	1955	1959 (a)	1961 (a)	1962	1963	1964
Polwarth	24.1	29.8	31.2	34.0	35.8	36.7
Corriedale	17.6	14.7	14.0	14.6	16.1	16.3
Merino	11.5	9.2	10.2	9.5	9.7	9.7
Romney Marsh	2.0	2.5	2.6	2.4	2.5	2.3
Border Leicester	1.3	1.8	1.5	1.6	1.3	1.1
Other Breeds (b)	2.6	3.2	3.4	2.8	3.1	2.4
Comebacks	15.8	13.2	11.4	12.2	11.5	12.2
Crossbreds	25.1	25.6	25.7	22.9	20.0	19.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

(a) Details of breeds of sheep for 1960 were not collected.

(b) Recognised breeds of sheep which individually, in 1964, accounted for less than 1 per cent of all sheep; includes Cheviot, Dorset Horn, English Leicester, Ryeland, Southdown, Suffolk, Lincoln, Poll Dorset and Shropshire.

The Polwarths and Merino Comebacks are well adapted to the sparse grazing of the plateau regions of the Midland Statistical Division. While the Corriedales are mainly run on improved pasture, the Merinos tend to thrive in the drier regions on native grasses; increasing numbers of Merinos are now being raised on sown and semi-improved pastures, the theory that they *had* to be run on hard country being discredited.

Pigs

The geographical distribution of pigs at 31st March, 1964, is shown in the next table:

Description of Pigs in Statistical Divisions
At 31st March, 1964

Particulars	N.W.	N.E.	North Mid- land	Mid- land	S.E.	South- ern	Rest of State	Total
Holdings with pigs ..	2,025	592	241	86	115	215	30	3,304
Pig Numbers—								
Boars	1,528	405	131	27	53	94	22	2,260
Breeding Sows	8,700	2,540	775	126	274	582	237	13,234
Other (a)	45,378	12,733	3,540	492	1,167	2,591	1,139	67,040
Total Pigs	55,606	15,678	4,446	645	1,494	3,267	1,398	82,534

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

The concentration of pigs in the North West Statistical Division can be related to the fact that this is the main dairying area and that pig-raising and dairying are almost invariably carried on as closely associated activities, separated milk providing an important item of pigfeed.

Pig Population

The pig population at 31st March each year is not, of itself, a very significant figure. It is possible for a sow to produce two litters within the one year and the offspring to number more than ten in each litter. Even allowing for high initial mortality, it is possible to wean anything from ten to twenty offspring, or even more, from a single sow within a year. It follows, therefore, that the real measure of activity in pig-raising is not so much the size of the pig herd at a particular point in time but rather the number of pigs slaughtered and the dressed carcass weight of the meat so produced; such information is given in the Livestock Products section of this chapter.

The following table summarises pig descriptions and pig numbers since 1950:

Description of Pigs on Rural Holdings

At 31st March	Boars	Breeding Sows	Other (a)	Total Pigs
1950	1,106	5,451	29,284	35,841
1955	1,608	9,065	47,709	58,382
1960	2,075	10,730	54,313	67,118
1961	2,168	11,371	57,343	70,882
1962	2,123	11,422	62,209	75,754
1963	2,112	11,447	56,443	70,002
1964	2,260	13,234	67,040	82,534
1965	2,327	14,578	75,116	92,021

(a) Includes baconers and porkers, backfatters, stores, weaners, suckers and slips.

In the previous table, the most significant increase is in the number of breeding sows. A sow can be mated at nine or ten months and the gestation period is a mere four months. The older technique was to allow the piglets to suckle for eight weeks before weaning but this could involve a 250 lb sow in the loss of 80 to 100 lbs live weight. A newer technique involves weaning within a fortnight so that the sow loses relatively little weight and can be remated within a fortnight or so after farrowing; the short gestation period and the planned synchronisation of farrowing with the maximum periods of food supply make possible the production of two litters within the one year.

LIVESTOCK PRODUCTS**Value of Production**

The statistics in the following section refer, in the main, to quantities of livestock products. The associated values will be found under "Value of Production" in Chapter 7.

Wool

In a report to Lieutenant-Governor Arthur in 1836, the Colonial Secretary, John Montagu, described the early export trade in wool: "From Parliamentary and Custom House Papers, to which I have had access, it appears that the quantity of Wool imported into England from N.S.W. and Van Diemen's Land in 1810 was 167 lbs; in 1820, it amounted to 99,415 lbs; in 1825, to 323,995 lbs. From 1827, the returns for the two Colonies are separated, and from that time I will confine my remarks to Van Diemen's Land." The report then quotes the following exports of wool from the island colony:

**Exports of Greasy Wool—Report of John Montagu
(lb)**

Year	Quantity	Year	Quantity	Year	Quantity
1827	192,075	1830	993,979	1833	1,547,201
1828	528,846	1831	1,359,203	1834	1,601,280
1829	925,320	1832	951,131	1835	1,942,800

Prices in 1824 varied from two and a half cents to five cents per lb but, by 1836, they had increased to range from 15 to 25 cents. The progress of wool production in the remainder of the 19th century can be gathered from the following table (compiled from export figures, since production details were not collected for the whole period):

**Exports of Wool (a) (Oversea and Interstate)—Historical Summary
(’000 lb)**

Year	Quantity	Year	Quantity	Year	Quantity
1835	(b) 2,429	1860	4,538	1885	5,774
1840	3,637	1865	4,924	1890	8,984
1845	3,662	1870	4,147	1895	7,223
1850	5,855	1875	6,199	1900	6,754
1855	5,858	1880	9,025	1905	9,566

(a) The figures relate basically to greasy wool but a small proportion of washed wool is included in the later years.

(b) An amendment of Montagu’s original figure.

Unfortunately the above series cannot be carried through the period 1910-1922 due to lack of interstate trade figures, or through the period 1922-1951 because “pure” greasy wool export figures (i.e. separated from scoured wools and tops and noils) are not available. The expansion of wool production in recent years is illustrated by the following export figures:

**Exports of Wool, Greasy (Oversea and Interstate) from 1950-51
(’000 lb)**

Year	Quantity	Year	Quantity	Year	Quantity
1950-51 ..	12,008	1955-56 ..	18,491	1960-61 ..	24,403
1951-52 ..	14,748	1956-57 ..	20,707	1961-62 ..	27,209
1952-53 ..	16,850	1957-58 ..	23,659	1962-63 ..	26,278
1953-54 ..	15,474	1958-59 ..	25,167	1963-64 ..	25,086
1954-55 ..	17,663	1959-60 ..	27,977		

It should be noted, however, that not all Tasmanian wool is exported in the grease, some being used for manufacturing purposes within the State; any locally processed wool exported would not be classified under greasy wool.

Wool Production

For statistical purposes, the total amount of wool produced in the State in any year does not just consist of the “clip” (shorn wool) but also of the wool on skins, irrespective of whether it is actually removed by local fellmongers or still on the skins when they are exported. Production figures, on this basis, are as follows:

Wool Production Since 1954-55
(^{000 lb)})

Year	Wool as in the Grease			Year	Wool as in the Grease		
	Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool on Skins Exported	Total		Shorn Wool (including Crutchings)	Fell- mongered and Dead Wool, and Wool on Skins Exported	Total
1954-55	21,149	2,648	23,797	1960-61	27,881	3,989	31,870
1955-56	20,790	2,632	23,422	1961-62	30,039	4,430	34,469
1956-57	25,705	2,974	28,679	1962-63	30,318	4,243	34,561
1957-58	26,110	3,065	29,175	1963-64	29,597	4,410	34,007
1958-59	28,892	3,742	32,634	1964-65	35,619	4,052	39,671
1959-60	29,091	4,509	33,600				

In the previous tables dealing with exports, a gap exists between 1905 and 1950-51 but production statistics are available as follows:

Total Wool Production—Historical Summary
(^{000 lb)})

Year	Production of Wool (as in the Grease) (a)	Year	Production of Wool (as in the Grease) (a)	Year	Production of Wool (as in the Grease) (a)
1905 ..	11,753	1924-25	12,483	1944-45	16,324
1910 ..	13,339	1929-30	15,000	1949-50	16,958
1914-15 ..	12,049	1934-35	14,035	1954-55	23,797
1919-20 ..	13,069	1939-40	18,334	1959-60	33,600

(a) Total wool production, including shorn, dead and fellmongered wool and wool exported on skins; fellmongered converted to greasy wool equivalent weight.

“Wool as in the Grease”

The above term is used to indicate that fellmongered wool included in total production has been attributed a weight as though it were untreated wool (i.e. wool in the grease) although the original information is supplied in terms of the weight of slipe wool emerging from the fellmongering process. (The relationship between greasy wool and fellmongered wool can be calculated from two yields: (i) Yield of clean wool from fellmongered wool. (ii) Yield of clean wool from greasy wool.) Conversion of such wool to a greasy wool equivalent is logically necessary since the components of total production—shorn wool, &c.—all need to be on a common basis. One hundred pounds of slipe wool may have a greasy wool equivalent weight from approximately 120 to 135 lbs, depending on the nature of the fellmongering process and of the wool itself.

Shorn Wool

The principal months for shearing in Tasmania are October, November and December. The following table gives shearing details for recent years:

Shearing and Shorn Wool Obtained

Year Ended 31st March	Numbers Shorn			Shorn Wool Obtained			Average Yield		
	Sheep	Lambs	Total	From Sheep (a)	From Lambs	Total	From Sheep (a)	From Lambs	Total
1954	'000 2,061	'000 492	'000 2,553	'000 lb. 16,760	'000 lb. 1,002	'000 lb. 17,762	lb. 8.13	lb. 2.04	lb. 6.96
1960	3,003	831	3,834	27,321	1,770	29,091	9.10	2.13	7.59
1961	2,945	733	3,678	26,193	1,688	27,881	8.89	2.30	7.58
1962	3,003	827	3,830	28,193	1,846	30,039	9.39	2.23	7.84
1963	3,021	762	3,783	28,524	1,794	30,318	9.44	2.35	8.02
1964	3,049	819	3,868	27,862	1,735	29,597	9.14	2.12	7.65
1965	3,171	807	3,978	33,752	1,867	35,619	10.64	2.31	8.95

(a) Includes crutchings from sheep.

The next table shows the geographical distribution of shorn wool production for the year 1963-64:

Shearing and Shorn Wool Obtained (a) in Statistical Divisions, 1963-64

Particulars	N.W.	N.E.	North Mid-land	Mid-land	S.E.	South-ern	Rest of State	Total
Number Shorn—								
Sheep (No.)	346,130	465,699	653,075	963,305	514,478	101,887	4,529	3,049,103
Lambs (No.)	112,258	121,525	171,309	273,161	122,185	17,865	918	819,221
Shorn Wool Obtained								
From Sheep ('000 lb)	3,004	4,381	5,898	9,267	4,442	831	39	27,862
From Lambs ('000lb)	358	307	346	464	217	41	2	1,735
Total ('000 lb)	3,362	4,688	6,244	9,731	4,659	872	41	29,597
Average Yield—								
Sheep .. (lb.)	8.68	9.41	9.03	9.62	8.63	8.16	8.61	9.14
Lambs (lb.)	3.19	2.53	2.02	1.70	1.77	2.27	2.18	2.12

(a) Includes crutchings from sheep.

Wool Auctions

The bulk of Tasmanian shorn wool is marketed in Hobart and Launceston at auctions organised by the wool-selling brokers; in a typical year, there are three sales usually in November, February-March, and May. Some wool, however, is bought direct from growers by dealers and by local manufacturers of woollen goods. A small proportion of the State's wool is marketed at Victorian auctions, growers on King Island and Flinders Island tending to use this outlet because of sea transport factors.

The following table shows the average price of shorn greasy wool sold at Tasmanian auctions since World War II and also the value of all wool produced:

Tasmanian Average Auction Price and Total Value of Wool Produced

Year	Average Auction Price per lb. of Shorn Greasy Wool	Total Value of Wool Produced (b)	Year	Average Auction Price per lb. of Shorn Greasy Wool	Total Value of Wool Produced (b)
	Cents	\$'000		Cents	\$'000
1944-45 (a)	16.17	2,680	1955-56 ..	54.60	12,380
1945-46 (a)	15.52	2,262	1956-57 ..	71.82	19,948
1946-47 ..	23.00	3,880	1957-58 ..	54.62	15,484
1947-48 ..	37.23	5,714	1958-59 ..	43.99	13,688
1948-49 ..	46.92	7,530	1959-60 ..	51.62	16,508
1949-50 ..	59.65	9,530	1960-61 ..	48.18	14,458
1950-51 ..	150.05	24,226	1961-62 ..	48.62	15,752
1951-52 ..	57.59	11,218	1962-63 ..	55.12	17,772
1952-53 ..	67.42	12,758	1963-64 ..	67.40	21,352
1953-54 ..	69.09	13,310	1964-65 ..	49.35	19,050
1954-55 ..	63.75	14,464			

(a) In years 1944-45 and 1945-46, price is the average appraised price fixed under an agreement with the British Government (the agreement operating from 1939-40 to 1945-46).

(b) Includes value of shorn wool, fellmongered and dead wool and estimated value of wool exported on skins. Excludes profits of \$3,201,510 arising from the War-time Wool Disposals Plan and distributed to growers in the period 1949-50 to 1954-55.

The preceding price series refers only to shorn greasy wool sold at auction. In arriving at the value series for all wool produced, account is taken not only of auction prices but also of dealers' transactions, manufacturers' direct purchases from growers, fellmongering operations and exports of wool on skins.

Classification of Greasy Wool Sold at Auction

The next table shows, on a percentage basis, the proportion of wool sold at auction according to its predominating quality:

Classification of Greasy Wool Sold at Tasmanian Auctions According to Quality (a)
(Source: Australian Wool Bureau)

Predominating Quality	Proportion of Each Quality (Per Cent)					
	1954-55	1959-60	1960-61	1961-62	1962-63	1963-64
70's and Finer	6.0	5.5	5.6	5.8	5.9	6.4
64/70's	2.6	2.6	2.8	2.7	3.3	2.8
64's	3.4	3.9	4.3	4.4	4.8	4.9
64/60's	0.6	0.5	0.7	0.4	0.6	0.8
60/64's	7.2	9.2	8.7	8.2	8.3	9.7
60's and 60/58's	14.8	17.4	18.7	17.7	17.5	19.1
Total 60's and Finer ..	34.6	39.1	40.8	39.2	40.4	43.7
58's	26.0	23.7	24.3	27.0	25.9	25.0
56's	22.9	20.1	19.3	18.5	18.4	16.9
50's	10.0	10.2	9.5	9.2	8.9	8.0
Below 50's	5.2	4.9	3.8	4.3	4.0	3.3
Oddments	1.3	2.0	2.3	1.8	2.4	3.1
Total All Wool ..	100.0	100.0	100.0	100.0	100.0	100.0

The above information is compiled by the Wool Statistical Service of the Australian Wool Board on the basis of catalogues of auction sales. "Quality" (64's, 60's, 58's, &c.) is a measure of the fineness and texture of wool for spinning purposes. Broadly, it means the maximum number of hanks of yarn, each of 560 yards in length, which can be spun from one pound of combed wool. For instance, wool of 64's quality is of a fineness and texture which will produce 64 hanks, each of 560 yards, from one pound of tops (combed wool) of that particular wool.

Clean Wool Yield

The Tasmanian proportion of auctioned greasy wool classified as "60's and finer" in recent years has approximated 40 per cent whereas the corresponding Australian proportion exceeds 70 per cent. In the matter of price, however, the Tasmanian auction average is usually a few cents above the Australian auction average. Tasmanian averages, with Australian equivalents in brackets, have been:—1960-61, 48.18c (43.38c); 1961-62, 48.62c (45.11c); 1962-63, 55.12c (49.17c); 1963-64, 67.40c (58.08c). This apparent contradiction is explained by taking into account a second factor, not included in the foregoing quality analysis, namely the yield of clean wool that can be obtained from greasy wool. In respect of this factor, Tasmanian wools tend to yield higher than Australian, both natural and artificial environmental factors operating to the advantage of the Tasmanian clip. Evidence of this peculiarity of Tasmanian wool is provided in the next table:

Average Clean Yield of Wool Clip, Tasmania and Other Australian States
(Source: Wool Statistical Service)

State of Sale (a)	Percentage of Clean Yield from Greasy Wool					
	1954-55	1959-60	1960-61	1961-62	1962-63	1963-64
N.S.W.	54.61	56.37	56.48	56.75	56.92	57.42
Victoria	59.69	59.35	59.05	59.19	58.99	59.63
Queensland ..	55.35	55.26	56.10	55.63	56.16	56.21
S.A.	52.72	53.10	53.67	54.07	53.12	53.98
W.A.	53.22	54.92	55.43	55.27	54.04	55.26
Tasmania	63.14	63.08	62.95	62.51	62.93	62.93
Australia	55.97	56.73	56.90	56.96	56.81	57.38

(a) Wool from the continental States is not sold at Tasmanian auctions so, for Tasmania, 'State of Sale' and 'State of Origin' are virtually the same except that some King and Flinders Islands' wool is sold at Victorian auctions.

As the above figures suggest, Tasmanian wool is freer from dust and vegetable fault than wool produced in the continental States.

While the proportion of fine wool (60's and finer) is comparatively low in the Tasmanian clip (since the State is historically and climatically a producer of crossbred wool), nevertheless growers offering "60's and finer" sell a very high proportion of superfine Merino wool at premium prices; this factor also operates to raise Tasmanian average auction prices above the Australian average.

Meat

Slaughtering

An obvious starting point in any description of meat production is the slaughtering of livestock for human consumption. To fully record the level of this activity, statistics should deal with operations in abattoirs, other

slaughtering establishments and factories; slaughtering on farms also needs to be taken into account since some owners consume their own livestock. Information on this complete basis did not become available before 1912, previous statistics relating only to slaughtering in Hobart and Launceston. The following table has been compiled to give an indication of slaughtering activity from 1912 to the present day:

Stock Slaughtered (a) For Human Consumption—Historical Summary ('000)

Year	Cattle and Calves	Sheep and Lambs	Pigs	Year	Cattle and Calves	Sheep and Lambs	Pigs
1912	29	216	16	1954-55 ..	75	643	79
1915	32	309	32	1959-60 ..	145	1,166	115
1924-25 ..	36	276	55	1960-61 ..	115	1,076	111
1929-30 ..	35	342	64	1961-62 ..	135	1,160	120
1934-35 ..	38	349	51	1962-63 ..	158	1,095	115
1939-40 ..	48	461	73	1963-64 ..	176	1,127	124
1944-45 ..	47	509	58	1964-65 ..	174	987	135
1949-50 ..	58	508	51				

(a) In all registered slaughtering establishments and on farms.

The next table, compiled on the same basis, covers the last ten years and analyses the items "Cattle and Calves" and "Sheep and Lambs":

Stock Slaughtered (a) for Human Consumption ('000)

Year	Cattle and Calves				Sheep and Lambs			Pigs
	Bulls, Bullocks & Steers	Cows and Heifers	Calves	Total	Sheep	Lambs	Total	
1954-55 ..	27	33	15	75	287	356	643	79
1959-60 ..	47	57	41	145	505	661	1,166	115
1960-61 ..	36	43	36	115	475	601	1,076	111
1961-62 ..	42	49	44	135	511	649	1,160	120
1962-63 ..	50	62	46	158	466	629	1,095	115
1963-64 (b) ..	51	71	54	176	545	582	1,127	124
1964-65 ..	53	71	50	174	425	562	987	135

(a) In all registered slaughtering establishments and on farms.

(b) In 1963-64, the farm component of total livestock slaughtered was: cattle and calves, 908; sheep and lambs, 84,762; pigs, 1,410.

Meat Production

Slaughtering statistics in the previous two tables suggest that there has been a very marked increase in meat production in the last ten years but a more certain indicator is the actual carcass weight produced. The necessary weight data are collected from abattoirs, factories and licensed slaughterhouses (including "country butchers"); in the case of livestock killed on farms, only the numbers are available and the resulting carcass weight has to be estimated.

Statistics in terms of carcass weight cover the same field as the previous tables on slaughtering. The following table shows, in summary form, details of meat production since 1924-25:

Production of Meat—Historical Summary
(’000 Tons—Carcass Weight)

Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat	Year	Beef and Veal	Mutton and Lamb	Pigmeat (a)	Total Meat
1924-25 ..	8.1	5.0	2.5	15.6	1959-60	23.1	20.8	5.4	49.3
1929-30 ..	8.0	6.0	2.8	16.8	1960-61	16.9	18.9	5.1	40.9
1934-35 ..	8.1	6.0	2.3	16.4	1961-62	19.7	20.2	5.4	45.3
1939-40 ..	10.6	7.7	3.5	21.8	1962-63	23.7	19.4	5.4	48.5
1944-45 ..	9.2	9.2	3.0	21.4	1963-64	25.9	20.1	5.9	51.9
1949-50 ..	12.3	8.9	2.6	23.8	1964-65	26.3	18.1	6.6	51.0
1954-55 ..	13.7	11.9	3.4	29.0					

(a) Includes pork for manufacture into bacon and ham.

The next table, compiled on the same basis, covers the last ten years and analyses the items “Beef and Veal” and “Mutton and Lamb”:

Production of Meat
(’000 Tons—Carcass Weight)

Year	Beef and Veal			Mutton and Lamb			Pigmeat (a)	Total Meat
	Beef	Veal	Total	Mutton	Lamb	Total		
1954-55 ..	13.3	0.4	13.7	6.0	5.9	11.9	3.4	29.0
1959-60 ..	22.2	0.9	23.1	10.1	10.7	20.8	5.4	49.3
1960-61 ..	16.1	0.8	16.9	9.4	9.5	18.9	5.1	40.9
1961-62 ..	18.8	0.9	19.7	10.1	10.1	20.2	5.4	45.3
1962-63 ..	22.7	1.0	23.7	9.5	9.9	19.4	5.4	48.5
1963-64 ..	24.6	1.3	25.9	10.9	9.2	20.1	5.9	51.9
1964-65 ..	25.4	0.9	26.3	9.1	9.0	18.1	6.6	51.0

(a) Includes pork for manufacture into bacon and ham.

Export of Meat

As early as 1890, the Australian continental States were exporting frozen (and later, chilled) lamb, mutton, beef and veal to overseas destinations but the development of a similar meat export trade from Tasmania has been of comparatively recent origin. The first major step was in the field of fat lamb production when the 1931-32 season resulted in approximately 19,000 carcasses being exported overseas; unfortunately the birth of this activity coincided with the economic depression of the 1930's and the attempt to introduce a new line in “mixed” farming was at first discouraged by low prices. World War II saw a revival of demand with over 100,000 carcasses exported overseas in 1943-44, and, after something of a decline in the early post-war period, exports climbed to a record 161,815 carcasses in 1959-60.

The other major development has been the growth of an export trade in beef and veal, the first shipments overseas commencing in 1954-55. The following are meat export figures for 1963-64 expressed in tons. Unfortunately export weights cannot be directly compared with production weights since the former include boneless meat while the latter are in terms of carcass weight.

**Exports of Meat, 1963-64
(Tons)**

Exported from Tasmania—	Beef and Veal	Lamb	Mutton	Pork	Offal (Edible)	Bacon and Ham
Interstate	1,272	131	454	1,017	..	13
Oversea	4,636	893	1,886	1	524	..
Total	5,908	1,024	2,340	1,018	524	13

The importance of the overseas meat trade can be judged from Australian Meat Board estimates of the percentage of Tasmanian production actually exported. The trend in recent years is shown in the following table:

**Proportion of Tasmanian Meat Production Exported Overseas (a)
(Source: Australian Meat Board)
(Per Cent)**

Meat	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64 (b)
Beef & Veal	2.2	..	..	2.5	4.5	8.7	7.7	14.7	20.0	26.1
Mutton	..	..	..	1.8	1.4	6.0	3.2	10.9	17.6	27.5
Lamb	13.6	10.6	13.0	13.2	25.5	23.0	17.7	12.7	13.6	9.6

(a) The estimated percentages are derived by converting actual export weights to a carcass weight equivalent, thus giving a basis for comparison with production figures.

(b) Subject to revision.

Meat Export Works

In 1963-64, the three main meat export works listed by the Australian Meat Board were at Hobart, Launceston and Burnie, (i.e. establishments with chilling, freezing and storage facilities). There were five other meat export works without storage facilities or with limited storage facilities and these were located at Hobart, Launceston, Devonport, King Island and Sorell.

In broad terms, it is true to say that Tasmania has changed from a meat importing to a meat exporting State and this development can be related to the changed pattern of farming, the most significant indicator being the increase in the area of sown pasture and in the number of livestock carried.

Bacon and Ham

In the tables on meat production, the product from pig slaughtering has been referred to as "pigmeat". Approximately 25 per cent of pigmeat was converted to bacon and ham in 1964-65. The next table shows the production of bacon and ham since 1939-40 in summary form:

**Production of Bacon and Ham
(Tons)**

Year	Bacon and Ham			Year	Bacon and Ham		
	Factory	Farm	Total		Factory	Farm	Total
1939-40	1,142	150	1,292	1960-61	1,100	20	1,120
1944-45	1,122	68	1,190	1961-62	1,112	19	1,131
1949-50	948	43	991	1962-63	1,165	17	1,182
1954-55	992	35	1,027	1963-64	1,151	15	1,166
1959-60	1,120	24	1,144	1964-65	1,158	13	1,171

Previous reference has been made to the close association between pig-raising and dairying, many dairy holdings raising pigs as a subsidiary activity.

Dairy Products

In 1964-65, Tasmania's production of milk reached a record level of 87,112,000 gallons. The following table summarises milk production since World War II:

Milk Production and Milk Utilisation—Summary

Year	Quantity of Milk Used For—			Total Milk Production	Dairy Cows at 31st March	Average Annual Production of Milk per Dairy Cow (b)
	Butter Making (Factory and Farm)	Cheese Making (Factory and Farm)	Other Purposes (a)			
	'000 Gals.	'000 Gals.	'000 Gals.	'000 Gals.	No.	Gals.
1944-45 ..	19,019	2,629	7,080	28,728	75,435	382
1949-50 ..	25,680	929	10,277	36,886	89,546	424
1954-55 ..	39,836	548	11,637	52,021	111,781	485
1959-60 ..	55,269	819	14,138	70,226	126,183	554
1960-61 ..	48,264	888	14,706	63,858	126,611	505
1961-62 ..	56,621	1,415	15,170	73,206	134,048	562
1962-63 ..	61,322	1,501	15,695	78,518	141,255	570
1963-64 ..	63,970	2,994	16,160	83,124	(c) 140,425	(c) 577
1964-65 ..	64,835	5,265	17,012	87,112	(c) 143,257	(c) 588

(a) Milk used for "other purposes" goes into the making of cream, ice cream, milk powder, concentrated milk, and other preserved milk products. It includes milk consumed as such.

(b) Milk yielding population is taken as mean of "dairy cows—in milk and dry" at 31st March in year of production and in preceding year. The figures should therefore be treated as an index rather than as an actual average quantity of milk produced per dairy cow.

(c) The 1963-64 farm census recorded house cows (i.e. kept primarily for own milk supply) as a separate item excluded from the dairy cow population. It follows that 1963-64 and following figures are not strictly comparable with those of previous years.

Production of Butter and Cheese

The Australian dairying industry is capable of producing butter and cheese in quantities considerably greater than are required for domestic consumption, but competition from other countries in overseas markets has resulted in low prices which tend to discourage exports. The solution to this problem has been, in general terms, to pool the returns from both domestic sales and overseas sales and to distribute from the pool to each individual factory, irrespective of whether its products are sold at home or abroad; in effect, a process of price equalisation operates, the higher domestic price being used as an offset to the lower overseas price. The administrative body implementing this scheme is the Commonwealth Dairy Produce Equalisation Committee Ltd.

The industry also receives subsidies from the Commonwealth Government under the provisions of the various Dairy Industry Assistance Acts, the first of which was passed in 1942. Subsidies are distributed by the Commonwealth Dairy Produce Equalisation Committee through factories to milk producers by payments on milk and cheese manufactured. It follows, then, that in the marketing of butter and cheese, two factors are in operation: (i) price equalisation directly affecting the return to factories; (ii) subsidies directly affecting the return to milk producers.

It should be noted that the Commonwealth subsidy is applicable to factory butter and cheese but not to the same products manufactured on farms; the decline in farm production is probably related in part to this factor.

Although Tasmanian butter factories had been in operation before the turn of the century, it was not till 1911 that annual factory production exceeded 1,000 tons and even by 1938-39, factory butter output was only approximately 4,000 tons. The next table summarises total production of butter and cheese since 1939-40:

**Production of Butter and Cheese
(Tons)**

Year	Butter			Cheese		
	Factory (a)	Farm	Total	Factory	Farm	Total
1939-40 ..	4,156	1,139	5,295	1,395	52	1,447
1944-45 ..	3,643	448	4,091	1,122	59	1,181
1949-50 ..	5,069	456	5,525	418	3	421
1954-55 ..	8,334	236	8,570	274	..	274
1959-60 ..	11,744	144	11,888	328	38	366
1960-61 ..	10,258	127	10,385	348	45	393
1961-62 ..	12,063	118	12,181	605	26	631
1962-63 ..	13,097	96	13,193	643	27	670
1963-64 ..	13,667	96	13,763	1,337	..	1,337
1964-65 ..	13,903	96	13,999	2,350	(b)	2,350

(a) Includes butter equivalent of butter oil.

(b) Not available.

Disposal of Butter

Tasmania is a butter exporting State as shown in the following table:

**Butter—Production, Exports and Local Sales
(Tons)**

Year	Production (Farm and Factory)	Net Exports (a)	Local Sales (b)	Year	Production (Farm and Factory)	Net Exports (a)	Local Sales (b)
1955-56	10,214	5,696	4,620	1960-61	10,385	5,301	4,685
1956-57	10,664	6,003	4,620	1961-62	12,181	7,457	4,467
1957-58	10,845	5,845	4,703	1962-63	13,193	8,642	4,521
1958-59	11,001	6,956	4,300	1963-64	13,763	8,227	4,885
1959-60	11,888	7,741	4,612	1964-65	13,903	10,231	4,527

(a) Net and gross are identical except in 1960-61 when 35 tons were imported. Includes overseas and interstate.

(b) Source: Commonwealth Dairy Produce Equalisation Committee Ltd. Includes factory consumption of butter.

Bee-Farming

Originally bee-farming statistics were collected from all apiarists irrespective of the number of hives operated but, as from 1956-57, the collection was restricted to apiarists operating five or more hives. The next table summarises bee-keeping statistics from 1956-57:

Bee-Farming

Year	Apiarists	Total of Hives	Honey Produced		Beeswax Produced	
			Quantity	Average Per Productive Hive	Quantity	Average Per Productive Hive
1956-57 ..	No. 183	No. 5,422	'000 lb. 372.2	lb. 87.6	'000 lb. 4.8	lb. 1.13
1959-60 ..	187	6,885	296.2	59.2	3.9	0.78
1960-61 ..	175	6,429	441.0	92.7	4.8	1.02
1961-62 ..	164	6,651	278.6	57.1	3.8	0.78
1962-63 ..	153	7,156	547.3	103.3	6.2	1.16
1963-64 ..	160	7,261	632.1	111.9	6.3	1.11
1964-65 ..	202	8,373	715.3	114.5	10.1	1.61

A proportion of the larger commercial apiarists can be described as "migratory", in the sense that they seasonally move their hives into the leatherwood areas of the West Coast; some hives are also moved into the orchard and small fruit areas at flowering time.

Poultry Farming

Egg Production

Not only farmers, but also many persons on holdings in rural and urban areas not coming within the "rural holding" definition keep poultry, and it therefore follows that the annual farm census cannot give an indication of the total number of eggs produced annually. Some indication of the trend in commercial egg production in other States is available from the reports of the Australian Egg Board which publishes data supplied by the various State egg marketing boards. Until the year 1957-58, details were also published for Tasmanian commercial production but from February, 1958, the operation of the Tasmanian Egg Marketing Board was modified by the lifting of restrictions on the private sale of eggs by producers and by the withdrawal of the requirement that producers should notify the Board progressively of quantities sold.

Details of commercial production of eggs in Tasmania (expressed in millions of dozens) and published by the Australian Egg Board were: 1944-45, 1.2; 1945-46, 1.2; 1946-47, 0.9; 1947-48, 0.8; 1948-49, 1.1; 1949-50, 1.5; 1950-51, 1.3; 1951-52, 1.0; 1952-53, 1.1; 1953-54 to 1956-57, 0.9 annually. Operations of the State Egg Board continue but there is insufficient information to extend the series beyond 1956-57.

Poultry Slaughterings

As from 1960-61, a collection was instituted covering the operations of commercial poultry slaughtering establishments in Tasmania. The results are set out below:

Poultry Slaughterings (a)
('000)

Kind of Poultry	1960-61	1961-62	1962-63	1963-64
Boiler Hens	79	91	88	99
Broilers—Under 2 lb. dressed weight ..	57	76	110	140
2 lb. and over, dressed weight ..	203	288	267	273
Ducks	9	12	7	9
Geese	1	1	1	1
Turkeys	6	9	6	8

(a) In commercial poultry slaughtering establishments only.

RURAL POPULATION AND EMPLOYMENT

Permanent Residents on Rural Holdings

Persons of all ages residing permanently on rural holdings (as defined for statistical purposes) numbered 26,148 males, 23,478 females, or 49,626 persons at the 31st March, 1964. The corresponding number of persons in 1963 was 30,161 and in 1962, 31,101.

When those of school and lower ages, and women engaged in domestic duties, &c. have been excluded, the remaining rural population is not necessarily engaged full-time in farming. In actual fact, some who are included in farm population devote much of their time to non-farming activities such as working in commercial or industrial enterprises, commercial fishing, sawmilling, &c. (which is only to be expected since a rural holding may be as small as one acre).

Employment on Rural Holdings

The following table gives details of males working on rural holdings as reported in the annual farm census at 31st March:

Male Farm Workers at 31st March

Particulars	1954	1961	1962	1963	1964
Number of Rural Holdings, 1 Acre and Over	11,818	11,201	11,117	10,974	10,949
Males Working Permanently Full-time on Holdings—					
Owners, Lessees or Share Farmers	9,610	7,615	7,614	7,457	7,685
Relatives of Owners, &c. over 14 years not Receiving Wages	500	189	93	111	40
Employees including Managers and Relatives Working for Wages or Salary	4,672	4,293	4,090	4,053	4,038
Total Permanent Males	14,782	12,097	11,797	11,621	11,763
Males Working Temporarily on Holdings on Wages or Contract	5,205	5,300	5,332	5,139	5,733

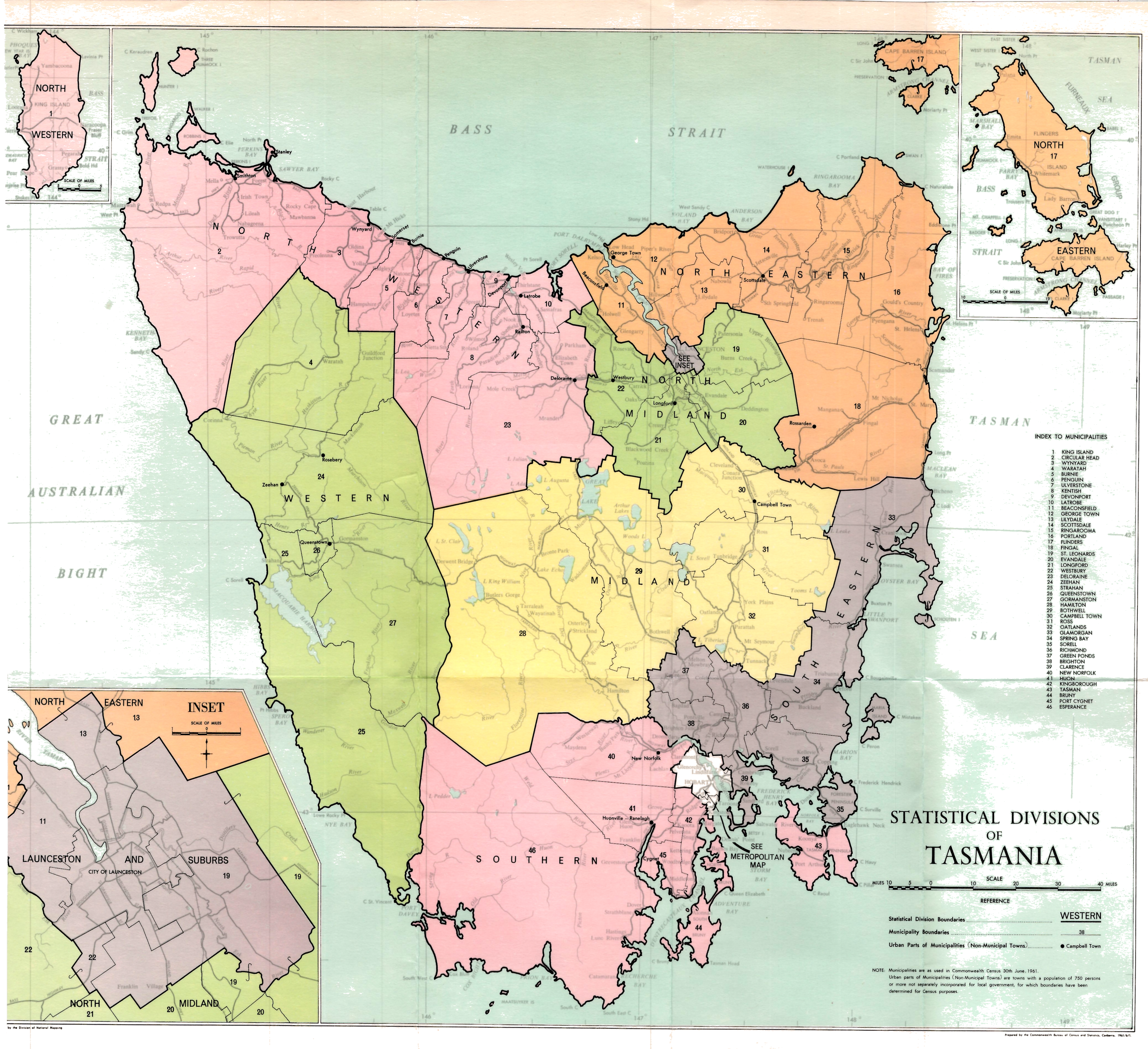
Female Workers on Rural Holdings

Similar details of female employment are not available due to a difficulty of definition; the difficulty is to establish in what degree a woman performing ordinary domestic duties on a rural holding performs other tasks that justify her classification as a *permanent full-time worker*, in the same sense that the term is applied to a male.

TECHNICAL ASPECTS OF RURAL INDUSTRY

Farm Machinery on Rural Holdings

The previous table showing male farm workers over a ten-year period indicated a substantial fall in the rural work force. This decline must be associated, in some degree, with the increasing use of machinery on farms. Perhaps the best indicator of the trend in farm mechanisation is the number of tractors on rural holdings:



INDEX TO MUNICIPALITIES

- 1 KING ISLAND
- 2 CIRCULAR HEAD
- 3 WYNYARD
- 4 WARATAH
- 5 BURNIE
- 6 PENGUIN
- 7 ULVERSTONE
- 8 KENTISH
- 9 DEVONPORT
- 10 LATROBE
- 11 BEACONSFIELD
- 12 GEORGE TOWN
- 13 ULYDALE
- 14 SCOTTSDALE
- 15 RINGAROOMA
- 16 PORTLAND
- 17 FLINDERS
- 18 FINGAL
- 19 ST. LEONARDS
- 20 EVANDALE
- 21 LONGFORD
- 22 WESTBURY
- 23 DELORAIN
- 24 ZEEHAN
- 25 STRAHAN
- 26 QUEENSTOWN
- 27 GORMANSTON
- 28 HAMILTON
- 29 BOTHWELL
- 30 CAMPBELL TOWN
- 31 ROSS
- 32 OATLANDS
- 33 GLAMORGAN
- 34 SPRING BAY
- 35 SORELL
- 36 RICHMOND
- 37 GREEN PONDS
- 38 BRIGHTON
- 39 CLARENCE
- 40 NEW NORFOLK
- 41 HUON
- 42 KINGBOROUGH
- 43 TASMAN
- 44 BRUNY
- 45 PORT CYGNET
- 46 ESPERANCE

STATISTICAL DIVISIONS
OF
TASMANIA

MILES 10 5 0 10 20 30 40 MILES

REFERENCE

- Statistical Division Boundaries
- Municipality Boundaries
- Urban Parts of Municipalities (Non-Municipal Towns)

WESTERN

38

● Campbell Town

NOTE: Municipalities are as used in Commonwealth Census 30th June, 1961.
Urban parts of Municipalities (Non-Municipal Towns) are towns with a population of 750 persons or more not separately incorporated for local government, for which boundaries have been determined for Census purposes.

Number of Tractors on Rural Holdings at 31st March

Type of Tractor	1954	1961	1962	1963	1964
Wheeled	5,111	8,641	9,035	9,605	9,831
Crawler	547	974	962	1,022	1,073
Total	5,658	9,615	9,997	10,627	10,904

In reviewing the complete field of farm mechanisation, it is not possible to make a ten-year comparison since some items have only become available in the required detail since 1959. The following table gives details of machinery on rural holdings at 31st March:

Machinery on Rural Holdings at 31st March

Type of Machinery	1959	1960	1961	1962	1963	1964
Cultivating Equipment—						
Rotary Hoes—						
Self Contained Power Unit						
Type	1,134	1,088	1,073	1,112	1,127	1,218
Tractor Mounted Type ..	525	548	576	605	610	681
Harvesting Equipment—						
Headers, Strippers and Other						
Harvesters	699	662	601	656	687	637
Mowers—						
Power Drive	3,639	3,866	4,050	4,341	4,592	4,703
Ground Drive	2,000	1,887	1,603	1,510	1,324	1,294
Hay Rakes—						
Side Delivery	1,650	1,709	1,904	1,977	2,121	2,198
Buck	923	948	984	1,027	1,005	1,034
Dump	1,448	1,389	1,312	1,233	1,161	1,147
Forage Harvesters	69	122	159	186	216	231
Pick-up Balers	1,025	1,100	1,232	1,346	1,405	1,494
Stationary Hay Presses ..	500	461	416	382	(a)	(a)
Potato Diggers	1,139	1,095	1,053	1,020	995	1,002
Seeding and Planting Equipment—						
Grain Drills (All Types) ..	3,871	3,840	3,867	3,899	3,884	4,002
Fertiliser Distributors and Broad-						
casters—						
Rotary	2,989	3,060	3,151	3,225	3,338	3,455
Direct Drop	1,778	1,851	1,945	1,947	1,917	1,970
Potato Planters	(a)	196	206	210	214	204
Other Equipment—						
Shearing Machines (No. of						
Stands)	3,798	3,899	4,052	4,113	4,249	4,371
Milking Machines (No. of						
Stands)	10,721	11,051	11,704	12,220	12,701	13,382
Hammer Mills	225	227	261	301	343	415
Power Driven Spray Plants—						
Fruit	1,273	1,226	1,171	1,165	1,179	1,214
Vegetable and Pasture ..	744	830	1,046	1,186	1,283	1,528
Power Driven Irrigation Plants	862	937	1,089	1,280	1,330	1,865

(a) Not available.

Artificial Fertilisers

The trend over the last ten years has been to greater use of artificial fertilisers as illustrated in the next table:

Artificial Fertilisers Used

Particulars	Unit	1954-55	1960-61	1961-62	1962-63	1963-64
Vegetables (a)—						
Area Fertilised	'000 Acres	52	39	48	26	25
Fertiliser Used—Total ..	'000 Cwt.	178	135	164	142	132
Per Acre	Cwt.	3.39	3.45	3.43	5.53	5.26
Fruit—						
Area Fertilised	'000 Acres	20	19	19	20	21
Fertiliser Used—Total ..	'000 Cwt.	113	111	97	133	149
Per Acre	Cwt.	5.65	5.94	5.21	6.64	7.08
Pastures—						
Area Fertilised	'000 Acres	767	1,080	1,154	1,165	1,291
Fertiliser Used—Total ..	'000 Cwt.	1,043	1,702	1,767	1,905	2,165
Per Acre	Cwt.	1.36	1.58	1.53	1.63	1.68
Other Crops—						
Area Fertilised	'000 Acres	111	98	110	160	189
Fertiliser Used—Total ..	'000 Cwt.	181	193	228	310	384
Per Acre	Cwt.	1.66	1.96	2.07	1.95	2.04
Total Usage—						
Area Fertilised	'000 Acres	950	1,236	1,331	1,371	1,526
Fertiliser Used	'000 Cwt.	1,515	2,141	2,256	2,490	2,830

In the twenty-year period ending in 1963-64, artificial fertiliser usage has risen rapidly, the area treated increasing by 250 per cent and the quantity applied by over 300 per cent. Two factors mainly account for these movements: (i) the marked increase in the area of treated pasture; (ii) the trend to more intensive application per acre generally.

Types of Artificial Fertiliser

The basic types of artificial fertiliser employed are phosphatic (e.g. super phosphate), nitrogenous (e.g. sulphate of ammonia) and potassic (e.g. muriate of potash), their essential chemical contribution to plant nutrition being phosphoric acid (P_2O_5), nitrogen (N) and potash (K_2O). Superphosphate, either "straight" or with additives, is most widely used in Tasmania, the additives consisting of trace elements such as cobalt, molybdenum, copper, boron, zinc, etc. In addition to the basic fertiliser types, the following combinations are also in use: mixed nitrogenous and phosphatic; mixed nitrogenous and potassic; mixed phosphatic and potassic; mixed nitrogenous, phosphatic and potassic. Due to the numerous combinations on the market, it has not been possible to obtain any detailed analysis of the fertiliser types applied to various purposes.

Mere weight of artificial fertiliser applied is a relatively crude measure of efforts to provide plant nutrients. For example, as a supplier of nitrogen and phosphoric acid, ammonium phosphate weighs only one third of the mixture of ammonium sulphate and superphosphate calculated to give the same amount of nutrients (assuming that the soil to be treated is not deficient in either calcium or sulphur). It follows that the tendency to increasingly use this and other concentrated fertilisers will have the effect of reducing the weight of fertiliser applied but nevertheless lead to an actual increase in the supply of plant nutrients.

Aerial Agriculture

The term "aerial agriculture" is applied to the use of aircraft for top-dressing and seeding, for spraying and dusting of crops and pastures, and for pest and vermin destruction. In Tasmania, the obvious limitations to more extensive development of this technique are small holdings and the nature of the terrain. The area treated from aircraft in the year 1963-64 (in '000 acres) was as follows: N.S.W., 8,692; Victoria, 1,640; Queensland, 516; S.A., 1,314 W.A., 1,529; Tasmania, 102. Even though the area treated in Tasmania is relatively small compared with that in the continental States, there has nevertheless been rapid development of this technique.

The following table gives details:

Aerial Agriculture
(Source: Department of Civil Aviation)

Year	Total Area Treated (a)	Superphosphate and Seed					Aircraft Utilisation (Flying Time)
		Area Treated			Material Used		
		Super-phosphate Alone	Super-phosphate and Seed	Seed Alone	Super-phosphate	Seed	
	Acres	Acres	Acres	Acres	Tons	lb.	Hours
1956-57	41,260	26,410	14,850	..	3,361	31,900	1,861
1957-58	104,055	95,780	7,025	..	6,167	7,800	2,234
1958-59	61,910	59,010	300	..	3,484	300	1,224
1959-60	72,617	63,295	2,675	80	4,759	582	1,270
1960-61	82,931	81,060	..	..	6,237	..	1,782
1961-62	88,200	78,430	..	100	4,612	300	1,107
1962-63	80,290	58,330	21,820	..	5,631	24,280	1,122
1963-64	101,986	62,570	20,656	..	7,668	10,560	1,640

(a) Including spraying and dusting of crops and pastures with insecticides, herbicides, etc.

Area of Land Irrigated

Comparison

In 1963-64, both N.S.W. and Victoria each had over one million acres of irrigated land; by way of contrast, the Tasmanian total was only 33,570 acres. Owing to the generally more reliable rainfall in Tasmania, scarcity of water is not such a problem as it is in the continental States, though not all streams are by any means permanently flowing.

Farm Storages

Until a few years ago, Tasmanian irrigated areas were negligible except for long-established hop fields, but there is a rapidly expanding use of spray irrigation on orchards and pastures and to some extent on potatoes and other vegetable crops. Up to the present, there has been an almost complete dependence on natural stream flows, but the need for some regulating storages is now apparent. Farmers are constructing storages of their own, and the extension of this practice is seen as the logical solution in most areas, as valleys are narrow and steep sided. Single large reservoirs cannot economically serve large areas of suitable land, as nearly every valley is separated from others by pronounced hills, prohibiting the construction of cross-country channels.

Water Resources

It is true that the State has very large volumes of water stored in the central lakes and behind the dams of the State Hydro-Electric Commission but no large irrigation scheme based on power-house discharge has yet been initiated. Unlike the Snowy River scheme, Tasmanian hydro-electric construction has been undertaken with production of power as the primary goal although the resulting storages of water at high level could obviously be the logical starting point for extensive irrigation schemes if the decision were taken to develop them.

The Derwent affords an example of the benefits of hydro-electric power development in regulating the flow of a river. Prior to the installation of the Waddamana Power Station in 1916, when the river was completely unregulated, the summer minimum flow was known to have fallen as low as 200 cusecs, and it is estimated that the lowest ever was possibly 120 cusecs. Today, regulated by the highland storages, the minimum summer flow in normal operating conditions is about 1,400 cusecs and the average summer flow is considerably above this figure. In actual fact, the long term average flow at present being maintained in the River Derwent at its lower levels is about 4,500 cusecs (i.e. 2,250 million gallons per day or approximately nine times the average amount consumed daily from the water supply system serving Sydney and Wollongong). A flow of 4,500 cusecs, assuming no evaporation, would fill Australia's largest storage—the Eucumbene—in just over a year, the Eildon in 10 months, the Hume in nine months, the Menindee Lakes in seven months, or the Warra-gamba in six months. The Derwent is an obvious example of a river from which large quantities of water can now be obtained without the creation of storages and similar opportunities exist on the South Esk, Huon, Lake, Mersey and Forth Rivers. The State's biggest rivers, the Gordon and Pieman, flow out to the West Coast and no diversion to the eastern half of the watersheds has been planned, if indeed such a scheme were practicable.

There are no State irrigation projects at present, but the State Rivers and Water Supply Commission is investigating the possibility of establishing a storage for the Coal Valley and preliminary investigations have also been made in the Jordan Valley. Discussions between the Commonwealth and State Governments have been held on the possibility of irrigating the Cressy-Longford area with power-house discharge from the Poatina turbines at the north-east of the Great Lake. (In 1965, the Commonwealth Government refused to make a grant available for this project.)

To summarise, it can be said that irrigation still plays only a minor role in Tasmanian farming generally but the basic resource—water—is available in plenty if ever the decision is taken to exploit the possibilities more fully.

Irrigation Methods

A small proportion of the area under irrigation is watered by gravitational systems and the remainder comprises areas devoted to fruit and vegetables and served by municipal water supplies or private spray systems.

Area Irrigated

Details of the area of crops and pastures irrigated in Tasmania are shown in the following table:

**Area of Land Irrigated
(Acres)**

Year	Area of Irrigated Land Used For—						Total
	Hops	Green Fodder	Fruit	Pasture	Potatoes	Other Crops	
1958-59	1,292	782	1,737	7,502	471	1,647	13,431
1959-60	1,311	1,286	2,350	11,339	467	1,355	18,108
1960-61	1,364	1,177	3,311	10,369	863	1,850	18,934
1961-62	1,447	1,589	3,930	11,713	1,374	3,136	23,189
1962-63	1,465	2,043	4,446	11,435	1,688	3,208	24,285
1963-64	1,463	2,703	5,933	15,693	1,984	5,794	33,570
1964-65	1,553	2,583	5,955	14,194	2,246	7,791	34,322

TASMANIAN DEPARTMENT OF AGRICULTURE

Historical

The State Department of Agriculture was preceded by Agricultural and Pastoral Societies which were concerned with agricultural practices and the quality of farm products.

In the late 1880's, the Department was formed with "Inspectors" and "Experts", the former to administer the various plant and animal regulations, and the latter to advise the Government on all phases of agriculture.

Gepp Commission

Following a request to the Commonwealth for financial aid, an investigation was made by the Development and Migration Commission under the Chairmanship of Mr. H. W. Gepp (later Sir Herbert Gepp).

Alerted by the Commission's report regarding the need to improve the agriculture of the State, mainly by spreading scientific knowledge among primary producers, the State Government agreed in 1927 to a re-organisation of the Department of Agriculture. The Department then consisted of a Director (appointed in 1926), three officers in the Farm Crops Division, a poultry supervisor, three officers in the Dairy Division, a horticulturist, veterinarian, agricultural economist, plant pathologist, and stock and port inspectors. The headquarters' officers were divided between Hobart and Launceston.

Re-organisation

The re-organisation provided for the strengthening of both extension and technical services, and appointments were made to the positions of Superintendent of Extension Services and Superintendent of Research. An Extension Service on a "general-practitioner district-officer" basis commenced when six "agricultural organisers" were distributed throughout the State. The recommendation of the Development and Migration Commission was that the duties of this service would be "to transmit information from the experts at headquarters effectively to the farmers".

A new concept was evolved, that officers of the Department were no longer to be merely concerned with purely regulatory duties or with acting as

advisers to the Government. This new view of function was expressed in the first issue of the *Tasmanian Journal of Agriculture* in 1929 by the then Director (Mr. F. E. Ward):

"To make two blades of grass grow where one grew before is a worthy enterprise but the objectives of the Department of Agriculture are much wider than this.

When the resuscitation of the agricultural industry of Tasmania was seriously attempted about two years ago, the aim was at least two fold: firstly, to increase the wealth of the community, and secondly, to improve the social and educational standards of rural life, so that those engaged in it would receive their deserved measure of stability and prosperity."

Present Functions

Today, the primary objectives of the Department are still very much akin to those stated in 1929—only the methods in achieving the end have altered and been expanded. The functions can be broadly defined under three main headings: (i) maintenance of an active policy of research and investigation into problems affecting agriculture; (ii) the provision of an intensive information dissemination service, which, by changing the knowledge, attitude and skills of the rural population, will enable farmers to make their own decisions in achieving improved standards of living and obtaining a measure of stability and prosperity; (iii) the execution of regulatory and administrative duties required under the relevant State Government Acts.

Present Structure

The present structure of the Department which is designed to carry out these functions, comprises the Agronomy, Horticultural, Dairy, Plant Pathology, Entomology and Fisheries Divisions, the Extension, Animal Health and Administrative Services, and the Sheep and Wool, Piggery, and Poultry Sections.

A brief description of the activities of these divisions, services and sections follows.

Agronomy

The division is divided into four main sections: pastures and soils; potatoes; cereal and pulse; and weeds. Work is carried out at the Mount Pleasant laboratories, Departmental research farms and on Crown and private land.

Pasture and Soils

The pasture and soils section conducts investigations into problems of pasture and crop establishment and the introduction and development of suitable pasture species and varieties. Pasture seed certification and seed production is also supervised. Pasture seeds concerned are perennial ryegrass, short rotation ryegrass, cocksfoot and white clover.

A seed testing laboratory located in Launceston conducts germination and purity tests under the *Seeds Act* and *Quarantine Act*, as well as tests on commercial samples. Referee tests are also carried out in collaboration with the International Seed Testing Association.

Potatoes

The breeding and introduction of new selections of potatoes suitable for Tasmanian conditions feature largely in the work of this section. Increased yields through the use of irrigation and improved cultural techniques are important aspects of present investigations.

The section also maintains, through the Tewkesbury Potato Station, supplies of "foundation" seed of the main commercial varieties—Bismark, Brownell, Up-to-date, Pink-eye and King Edward. A potato blight warning service is maintained, in co-operation with the Plant Pathology Division, for the benefit of commercial potato growers.

Cereals and Pulse

Continuing investigations over the years into the breeding and development of suitable strains of cereals and pulse have resulted in the release of a number of strains more suitable to local conditions. Testing under Tasmanian conditions of oversea-developed varieties and hybrids also features largely in the work of this section.

Another important aspect is the supervision of the cereal and pulse certified seed production scheme, embracing the following varieties: Algerian Oats A236, Blythe and Onward oats, Macquarie and Pinnacle wheat, Blue and Maple peas and Proctor barley. A malting barley competition, conducted in conjunction with Tasmanian Breweries Pty. Ltd. has proved of considerable benefit to barley growers in this State.

Weed Control

This section assumes responsibility for investigations into weed control problems in pasture and crops as well as for the supervision of the work of regional weed inspectors appointed under the *Noxious Weeds Act* 1964.

The supervision of the policing of noxious weeds quarantine areas is another obligation. Weed identification and advice on control methods are further services provided for the public.

Horticulture

The Horticultural Division is concerned with research and extension, and is also closely associated with the work of the port section in the inspection of horticultural crops for export, and the examination of plants imported from oversea countries, on behalf of the Commonwealth under the *Plant Quarantine Act*.

The Plant Quarantine Station at Bruny Island facilitates the handling and growth of plant material introduced from overseas.

Research

The research side is concerned with the problems associated with growing, harvesting, packing, storing and processing the main horticultural crops. Research into problems of apple and pear production is mainly conducted at the Grove Horticultural Research Station in the Huon and at the New Town Laboratories.

Vegetable investigations are now mainly concentrated at the new Forthside Vegetable Research Farm in the north, although a number of trials are still being carried out with the co-operation of private landholders.

A hop propagation area containing original basic selections is maintained at Grove, while the facilities of the New Town Laboratories are used to raise hop seedlings from special crosses.

Extension

Extension activities are organised on a regional basis. Three regions, South, North and North-West, are sub-divided into districts for ease of management. District Horticultural Officers are located throughout the fruit and vegetable areas to advise growers on both technical and management aspects.

Other functions of District Officers include the assessment and reporting upon loan applications for the Agricultural Bank, and assessing hail damage to pome fruit on behalf of the Tasmanian Government Insurance Office. A vital part of extension work is that of crop forecasting, upon which depends the forward ordering of shipping for the export crop.

Dairying

The administration by the Dairy Division can be considered from two aspects—regulatory and advisory.

Regulatory

Under the *Dairy Produce Act 1932*, *Dairy Produce (Margarine) Regulations* and the *Filled Milk Act 1957*, the Department of Agriculture is responsible for the observance of the law with respect to production, manufacture and sale (other than by retail) of dairy produce, filled milk, and of substitutes such as margarine.

Under the powers of this Act, Dairy Officers inspect premises, take samples for analysis, examine books and records kept on the premises, and grade produce.

Advisory

The work undertaken by this Division is concerned principally with milk and cream quality (both on the farm and at the factory); herd improvement by means of herd recording; advice on feeding and breeding; the provision of a cheese starter and legume inoculation service.

Entomology and Plant Pathology Divisions

The work of both these Divisions is predominantly of an investigational and research nature. Investigations are currently under way on a number of insect and disease problems affecting the various economic crops of the State.

One particular line of investigation is the evaluation of newly developed pesticides and herbicides. The two Divisions also maintain advisory services to handle individual queries on identification and control.

Animal Health Service

The Chief Veterinary Officer in charge of the Animal Health Service is also the Chief Quarantine Officer (Animals) for Tasmania. Quarantine stations for animals coming from overseas are located at Taroona in the south and at Kings Meadows in the north. The southern station is also used for interstate cattle quarantine.

Veterinary officers are located at various district centres to carry out disease control and investigational work. Where no private practitioner is established, Departmental veterinary officers attend clinical cases for stock-owners, as well as carry out their departmental duties. An extensive investigational programme into many of the diseases affecting Tasmanian animals is undertaken at the Mt. Pleasant Laboratories.

Animal Reproduction Section

This section was, until recently, providing an artificial insemination service for farmers. Now the Artificial Breeding Board has assumed responsibility for all artificial insemination activities. Investigation into infertility in herds has continued and has resulted in a considerable decrease in its incidence.

Animal Nutrition Division

Investigation into the various factors affecting animal nutrition is the major role of this Division and covers such aspects as feed quality, pasture utilisation, performance testing, micronutrients, and intake and digestibility trials.

Stock Inspectorial Service

Through the medium of stock inspectors, the Service has been able to provide an effective team of men to inoculate sheep and cattle in areas where disease is affecting stock.

Quite a large proportion of their time is devoted to disease control work under the guidance of veterinarians and their work includes the collection of blood samples for testing, and the policing of the *Stock Act* 1932, in matters directly relating to animal health.

Vermin Destruction

Vermin inspectors, working in close collaboration with local government authorities, are concerned, under the *Vermin Destruction Act* 1950, with rabbit eradication and control. This section provides a service for farmers for a small charge whereby the inspectors carry out the actual laying of the poison baits, using 1080 poison.

Extension

Advice on current problems using all available forms of mass media, is undertaken by a Veterinary Extension Officer located in Launceston. Active liaison is maintained with the Tasmanian Hydatid Eradication Council.

Other Specialist Livestock Sections

Sheep and Wool

This section investigates current problems associated with sheep breeding and management, and conducts demonstrations on various aspects of sheep and wool production. These investigations and demonstrations are largely located on the Cressy and Elliott Research Farms but others are run on properties of co-operating private landholders. Competitions and shearing courses are also arranged.

An advisory service on wool, particularly as regards classing and preparation of the clips, is a prominent feature of the Section's extension activities.

Piggery Section

This is a dual purpose section, carrying out investigations into various problems of pig production, as well as providing an advisory service with Piggery Officers located in the various districts of high pig density.

The section assists the pig producer in many ways, e.g. pig raising competitions, a sow recording scheme, and the progeny testing of stock raised at Cressy. Research work is mainly confined to the Cressy Research Farm but some investigational and demonstrational work is carried out on private properties.

Poultry Section

The poultry section provides an advisory service on all aspects of the poultry industry—stock raising, commercial egg production and table poultry production.

A random sample laying test run each year at a special poultry centre on the Cressy Research Farm provides entrants with detailed information on the performance of their stock, and provides valuable information for intending purchasers of breeding stock. Advice is also provided on the management of other poultry ventures, e.g. geese, ducks and turkeys.

Fisheries Division

The functions of the Fisheries Division are described in Chapter 7, "Primary Industry—Non-Rural".

Research and Investigations*Introduction*

The fundamental work, undertaken in the State's research farms and laboratories, is aimed at increased production through improvements in plant and animal performance.

At present, there are three research stations and one laboratory associated with agronomical research, two research stations and a laboratory involved in horticultural research, one bacteriological laboratory devoted to dairy research and bacterial investigations, and laboratories which deal with entomological and pathological investigations. Livestock studies are conducted on two of the stations associated with agronomical research.

The following shows current work programmes:

Cressy Research Farm

This station is comprised of two properties which together total more than 1,500 acres. Since its foundation in 1937, a wide range of research has been undertaken in crop, pasture and livestock production.

The major activity has been, and still is, the production of cereal, pulse and pasture species foundation seed. This work involves the evaluation and field testing of the strains and varieties of crop and pasture seeds offering most promise under local conditions, as well as breeding programmes to grow the suitable types as foundation seed.

The most noteworthy achievements in this field have been obtained with Algerian, Onward and Blythe varieties of oats; Macquarie wheat; Proctor barley; blue and grey field peas; Tasmanian No. 1 Strain perennial ryegrass. All these certified lines have given better production results than the ones

they superseded. In the current programme, new strains and varieties of crop seeds and pasture plants such as white clover, phalaris, lucerne, &c. are under review.

Livestock pursuits to date have been, in the main, concentrated on poultry, sheep and pigs.

Poultry: The facilities of the Cressy Poultry Centre have, since 1960, been used exclusively for poultry random sample testing. Five "tests" have been successfully completed in that time and it is already felt that the effects are evident in the superior strains of laying stock now being bred for egg production.

Sheep: Sheep studies conducted at Cressy include the evaluation of grazing management systems; breed performance tests; winter feeding trials; autumn versus spring shearing investigations; seasonal woolgrowth studies; sucker versus carryover lamb trials to ascertain their relative suitability to the prime-lamb trade; oestrus studies with Corriedale weaners; late lambing trials and nutrition trials.

Pigs: The pig research investigations conducted on the farm have been directed, in the main, by the trend of the industry. At the present time the following investigations are in progress; temperature studies involving the use of artificial heat in pig housing; the investigation of growth stimulants by the supplementation of the standard Cressy Research Farm ration with copper, terramycin and nitrofurans; the investigation of grain supplements to a skim milk diet; comparative feed trials using protein feed supplements and including fish meal, meat meal and skim milk; observations on the efficiency of different types of sleeping floors; investigations into the need for mineral supplements to pig rations; a comparison trial involving the simple Cressy feed ration and a complex ration in pelleted form.

In addition to the research programme, a breeding programme involving Large White and Berkshire stud stock is also conducted. The young stock resulting from this programme are progeny tested and released to the public to improve the overall quality of livestock in the local industry, after the requirements of the research projects, which take precedence, have been satisfied.

Elliott Research Farm

This station was established in 1950 as a second testing area for Cressy-proven materials and for some specific crop and livestock investigations. The station is located on basalt soil which is representative of the North-West region of the State, and which differs markedly from the alluvial and lateritic soils at Cressy.

At the present time, the foundation seed production programme on the farm incorporates the following crops: Algerian oats, Proctor barley, blue field peas and potatoes. Pasture plant investigations, including plant selections, also constitute an important segment of the farm work. In practice, it is common for the same strains and varieties of pasture species used at Cressy to be grown and evaluated concurrently on the two stations.

Other crop investigational work includes a multi-species forage crop, fertiliser trials, and several undertakings with potato crops. These include the screening of all promising potato seedling selections by growing them from the third year up, under irrigation, and a "time of planting" investigation to determine the optimum planting dates for the main varieties. In addition, potato varieties are selected for their suitability to local conditions, and

fertiliser requirements, particularly the type and application rates, are assessed with regard to their effect on yield and quality. The spacing of setts under conditions of irrigation is also being investigated to determine the optimum space with regard to yield.

In livestock research, activities on the farm are restricted to sheep investigations and, of these, the carpet-wool breeding project is of primary importance at the moment. Other projects include a replacement ewe trial comparing the breeding performance of ewe lambs with two-tooths and cast-for-age ewes, and a stock management trial comparing the set-stocking method of grazing, on a whole farm basis, with conventional rotational grazing methods.

Tewkesbury Potato Station

The primary function of this station (the first established and dating from 1933), is to improve the cropping capacity of seed potatoes. In practice, this is realised by maintaining a healthy condition in the foundation seed supplies of the major potato varieties, through heavy roguing and plant selection.

A limited research programme is conducted under which a study of the effect of time of planting on a seed crop with regard to the number and size of tubers is currently in progress. Selections of varieties suited to local conditions are continuously made, and the effect of type and application rates of fertilisers on potato yield and quality is also being measured. Investigations into the treatment of seed and cut setts with dips and dusts, &c. are also conducted to determine effects on germination.

Laboratories

Both laboratories with agronomical associations are located at Launceston. At the main centre, the Mt. Pleasant Laboratories, the current programme involves plant breeding and selection studies; pot culture investigations of problem soils; quality testing of potatoes including specific gravity determinations, ability to withstand bruising, and resistance to black spot as well as cooking and tasting tests; seed testing for the Certification Scheme; chemical soil analyses with particular regard to their fertiliser requirements.

At the bacteriological laboratory, one of the functions is the production of cultures of *Rhizobium* species for all legume hosts of economic importance and these are maintained and released for inoculation purposes on request.

Huon Horticultural Research Station

At this station, most of the projects undertaken are long term and have been primarily designed to answer practical problems. The results are making a useful contribution towards improved orchard management.

The current work programmes are confined almost exclusively to the pome fruits and some ninety projects are being handled. These include rootstock trials to investigate their suitability under local conditions; pruning trials to determine its influence on crop production; combined rootstock, pruning and management trials which are designed to study the economics of varying tree size and tree numbers per acre; manurial and cultural trials; propagation trials which are directed towards the establishment of cheaper methods of propagating rootstocks of fruit trees; the evaluation of improved varieties, bud sports and selections.

Subsidiary trials related to "guard" and "inter-plant" trees are currently contained in the main planting designs and also included are: (i) studies on the effects of top and root treatments when applied to a wide range of commercial

varieties worked on medium and dwarfing rootstocks; (ii) the interacting effects of early fruit loads on trees; (iii) tree establishment factors under local conditions.

Forthside Vegetable Research Farm

The primary aim on this farm is to undertake general research on all appropriate horticultural crops, including performance testing of new strains and varieties. With certain crops, the reselecting and multiplication of promising stocks are carried out for the production of foundation seed. Those crops at present under consideration in the current research programme include green peas, french beans, broad beans, carrots, onions, brassica crops, tomatoes and oil poppies.

Other aspects considered with regard to some vegetables are seeding rates and plant densities, evaluation of their canning and freezing qualities, fertiliser requirements and optimum harvest maturity.

New Town Experimental Station

The main investigations and research conducted at this centre relate to the post-storage behaviour of apples and pears held under regulated temperatures in modified ripening rooms. Factors examined and assessed in these investigations include bruising and break-down.

The facilities are also used for the raising of hop seedlings produced from seed of special crosses. After preliminary selection, these are then transferred to plots. Examination and analysis for hop alpha resin is also carried out at this centre.

Other work involves pot trials to investigate the possible interaction of basic and acidic forms of nitrogen on the availability of phosphorus, and the effects of variation in localised pH (acidity or alkalinity measure) in certain soils under various treatments. Several comprehensive trials concerning swedes and green peas have been performed, routine propagations have been carried out on certain plants and the use of "mist" apparatus in the multiplication of blue-berries and certain pome fruits evaluated.

Extension

The Extension Service of this State is organised on a regional basis. Extension officers, known as Agricultural Officers, are stationed within three main regions, where they work in the field as general practitioners and maintain contact with the farming community. Horticultural Officers are similarly located within the major fruit growing areas.

The main function of these Extension Officers is the provision of a farmer's advisory service. To enable these officers to be kept up to date with the research findings of the scientific divisions of the Department, they are kept continually informed of the results of research work. They are, therefore, in a position to bring to the notice of the farming community all new and improved practice relating to farm management programmes. This information is relayed to the farmer in the following ways:

Extension Methods

Farm Visits: While it is realised that the personal visit of an officer on to the property has many advantages, and is often essential if assistance is to be given, it is not feasible to visit all of the eleven thousand primary producers in the State. However, as many farm visits as possible are made during the year.

Field Demonstrations and Field Days: The demonstration of new practices is carried out with the co-operation of farmers who make suitable land available on their property for the demonstration of a new variety or a new technique. These farmers then allow their properties to be used for a field day to which members of the farming community are invited. Until recently it had been the practice to hold a number of large-scale field days in different parts of the State. The emphasis has now changed towards smaller but more frequent field days with more of a local interest.

Meetings: Opportunity is taken by Extension Officers of contacting farmers through invitations to address them at branch meetings of their organisations. By this method, officers are able to contact a large number of farmers during the year.

Short Courses, Congresses and Schools: Officers of the various divisions and sections co-operate to assist the Extension Service in conducting courses, congresses and schools. These, which may vary from one to five days, sometimes take the form of meetings in local halls or drives from property to property where points of special interest to farmers are studied and discussed.

Mass Media

Other extension work is carried on by radio talks and television appearances, special articles for the press, and by the publishing of a Departmental Journal of Agriculture, bulletins, pamphlets and similar publications.

In general, the farming community can regard their local Agricultural or Horticultural Officer as their direct liaison with the work of the Department. Being intimately associated with the problems of the farming community of their district, these officers are readily available to provide the information required by the primary producer.

Chapter 7

PRIMARY INDUSTRY—NON-RURAL

FORESTRY

Introduction

Writing in 1891, the Government Statistician, R. M. Johnston, described the timber resources of the State as follows: "Tasmania is peculiarly a forest country. Trees of great dimension tower over and eclipse all the lesser undergrowths on plains, valleys, hills and mountain slopes. Of the 16,778,000 acres comprising the total area, there are only 75,500 acres occupied by lakes, and 488,354 acres of cultivated land only partially cleared of its timber trees. With the exception of minor areas on the tops of mountains or among the barren uplands of the Western Highlands, the whole of the rest of the country is occupied with an almost continuous virgin forest, mainly composed of the variable forms of *Eucalypti* (Gum Trees), one noted example of which, the Tolosa Blue Gum, has been recorded as measuring a height of 330 feet." In a later passage, he drew this conclusion: "With such a wealth of forest trees, Tasmania's sources of timber supply must be infinitely great, and, in the near future, must be of great industrial value."

It is doubtful whether this picture of an island almost completely forested was true, even when the early settlers arrived, since some of them established holdings on open savanna-like country which owed its origin to a long history of firing by the Tasmanian natives. Far away in the west and south were extensive areas of sedgeland and button-grass plain while the upper mountain country took on the appearance of moors. In the one hundred and sixty years or so since the first settlement, land clearing, timber exploitation and fires have left their mark and the Forestry Commission estimated the total forest area as 7,848,000 acres at 30th June, 1964, (i.e. approximately 46 per cent of the State's total area). By Australian standards, however, a State with 46 per cent of its area under forest is uniquely endowed.

Trees of the Tasmanian Forests

Forest Types

There are two basic types of forest in Tasmania, namely rain forest and sclerophyll forest, and their respective occurrence may be correlated with intensity of rainfall. The rain forest is principally located in the western half and also in the north-east highlands, the sclerophyll forest predominating elsewhere. In the Tasmanian situation, the sclerophyll forest can be regarded as eucalypt forest with very little loss of accuracy, so dominant are the eucalypts. The temperate rain forest is characterised by the dominance of *Nothofagus cunninghamii* (myrtle) and, to a lesser extent, of *Atherosperma moschata* (sassafras) and *Acacia melanoxylon* (blackwood). The exclusive appearance of myrtle types or of eucalypts is determined by rainfall factors. In areas with annual falls above 60 inches, the myrtle appears to exclude the eucalypts, while in areas averaging 45 to 60 inches myrtle is found as understorey cover to eucalypt

growth. Since the eucalypts are the most important Tasmanian source of timber, in general it can be said that the better quality forests grow in regions between the 30-inch and 60-inch isohyets. The most valuable eucalypts in such forests belong to the ash group and include *delegatensis*, *obliqua* and *regnans*. In areas with falls of less than 30 inches, the forests have *globulus* (blue gum), *linearis* and *pauciflora* (peppermint), *ovata* (swamp gum), *viminialis* (white gum) and also *obliqua* (stringybark).

Hardwoods and Softwoods

Tasmanian forests are now almost exclusively cut for hardwood, the principal indigenous softwoods having been heavily exploited in the past without effective regeneration; what softwoods remain are in remote and inaccessible areas. The principal varieties are *Athrotaxis selaginoides* (King Billy pine), *Dacrydium franklinii* (Huon pine) and *Phyllocladus aspleniifolius* (Celery-top pine). The scarcity of indigenous softwoods is being met, in part, by the creation of exotic plantations, the principal growth being *Pinus radiata*, but at 30th June, 1964, the softwood plantations (26,000 acres) accounted for only 0.3 per cent of the State's total forested area.

Demand for Forestry Products

Timber was always in demand as a fuel, and as a building and construction material from the days of the original settlement, but the major impetus to increased forestry activity came in 1938 when paper mills were established at Burnie, technology having advanced to the point where native hardwoods could be used as the basic raw material. The possibility of using eucalypts for paper manufacture had been investigated in the previous century by Sir Ferdinand von Mueller, the celebrated botanist, and he concluded that eucalypts provided a bark which was suitable for the manufacture of paper, not only for the coarser varieties but also for printing and writing. In actual fact, when paper making was begun at Burnie, the process involved discarding the bark and converting whole peeled billets to pulp. Shortly afterwards, the only newsprint mill in Australia was established at Boyer on the Derwent and more recently, a semi-chemical pulp mill has begun operations at Geeveston in the south. Further utilisation of forestry products has been introduced by factories producing plywood, hardboard, particle board, &c.

Forest Area

In the following table, details are shown of Tasmania's total forest area, including its location on Crown or private land:

Classification of Forest Area (Gross) at 30th June, 1964
(^{'000 Acres})

Forest Area	Located on—		Total
	Crown Land	Private Land	
Exploitable—Hardwood ..	3,985	1,597	5,582
Softwood	18	8	26
Total	4,003	1,605	5,608
Potentially Exploitable Hardwood	779	..	779
Other Areas Classified as Forest ..	944	517	1,461
Estimated Total Forest Area ..	5,726	2,122	7,848

The previous table includes all forests and plantations, whether easily accessible or not, and also the forested areas in scenic reserves. The next table gives details of that part of the total area which is under reservation:

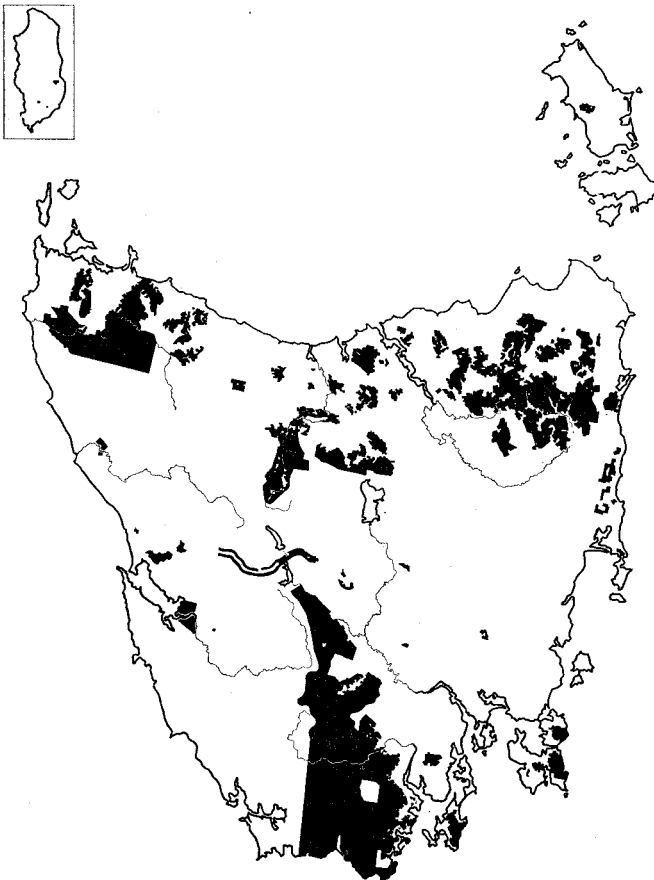
Forest Area (Gross) Under Reservation at 30th June, 1964
(⁰⁰⁰ Acres)

Particulars	Pulpwood Concessions	Exclusive Forestry Permits	Scenic Reserves (a)	Other	Total
State Forests (b)	465	263	..	1,663	2,391
Timber Reserves (c)	..	..	..	138	138
Other Forested Reserves	612	370	235	..	1,217
Total	1,077	633	235	1,801	3,746

(a) Estimated forested component of national parks and scenic reserves.

(b) Land permanently dedicated to timber production.

(c) Land reserved for timber supply, including fuel.



Distribution of State Forests

The area of plantations of exotic pines at 30th June, 1964, was 26,059 acres, of which 7,677 acres were on private land.

Classification of State Forests

The classification by the Forestry Commission of the State Forests is a continuous process and a large section still remains unclassified. The position is as follows:

Classification of State Forests at 30th June, 1964
(’000 Acres)

Particulars	Area	
Commercial Forest—		
Eucalypt (sawlog quality)	492	
Eucalypt (pulpwood and firewood)	241	
Regrowth (immature forest)	191	
Rain Forest (myrtle, sassafras, &c.)	222	
Cleared Land (deforested areas)	50	
Total Productive Forest		1,196
Protection Forest—		
Scrubland and Plains	325	
Barren and Waste	255	
Total Unproductive Forest		580
Total Classified Forest		1,776
Total Unclassified Forest		763
Total State Forest		(a) 2,539

(a) Includes area as proclaimed at 30th June, 1964 (2,391,291 acres) plus 147,516 acres, the additional area disclosed by revised mapping.

The State forests are located, in the main, in four distinct regions: (i) far north-west about the axis of the Arthur River; (ii) north-eastern highlands; (iii) north and north-west of the Great Lake; (iv) from the south coast north to Lake King William.

Paper and Newsprint Industries

The establishment of paper, paper pulp and newsprint industries in the State has given rise to the need for some guarantee of assured timber supplies to the manufacturers, and therefore certain concessions and cutting rights have been awarded on Crown lands. Details follow.

Burnie and Wesley Vale

Associated Pulp and Paper Mills Ltd. and subsidiaries—manufacturer of paper and hard lining-board at Burnie and also of particle board at Wesley Vale. The company owns some forested land and holds cutting rights over Crown lands 15 miles each side of the Emu Bay railway line from the coast to the Pieman River. Particle board manufacture is based on northern *Pinus radiata* plantations.

In September, 1965, plans were announced for installation within three years of the first paper machine at Wesley Vale, the programmed output of the plant to be 30,000 tons of fine paper a year, thus increasing present capacity available at Burnie by up to 30 per cent; the first machine is to operate on imported pulp. A second machine, operating on native eucalypt pulp, is then

to be installed and the general programme, subject to favourable economic conditions, envisages duplication at Wesley Vale of the company's Burnie operations. Large areas of Crown land in the north and north-east will provide the raw material for the Wesley Vale plant.

Boyer

Australian Newsprint Mills Ltd.—manufacturer of newsprint at Boyer on the Derwent. The company's concession follows the general line of the Derwent as far north as Lake King William.

In September, 1965, plans were announced for installation of a third paper-making machine with the object of raising capacity from 90,000 to 160,000 tons of newsprint a year; subject to favourable economic conditions, the new machine should be in operation within three years.

Geeveston

Australian Paper Manufacturers Ltd.—manufacturer of paper pulp at Geeveston on the Huon River. The company's pulpwood concession includes virtually the whole D'Entrecasteaux Channel coastline and extends west as far inland as the Mt. Picton area; also included in the concession are Bruny Island and Tasman Peninsula.

Multiple Use of the Forests

The establishment of paper-making industries in Tasmania has required careful use of existing forests and the Forestry Commissioners described the process in their 1960 report as follows:

"In respect of timber products, pulpwood and sawmill logs will come from the same areas and often the same trees. In this, the co-operation of the wood-using industries is already functioning well. Sawmill logs come out of both the A.N.M. and A.P.P.M. concession areas. Pulpwood is cut from areas cut by sawmillers or in conjunction with mill-log production; sawmill edgings and offcuts are delivered to the pulp mill at Burnie." In their 1964 report, the Commissioners made this point: "The increased demand for pulpwood has led to the utilisation of trees and timber that would otherwise have been wasted."

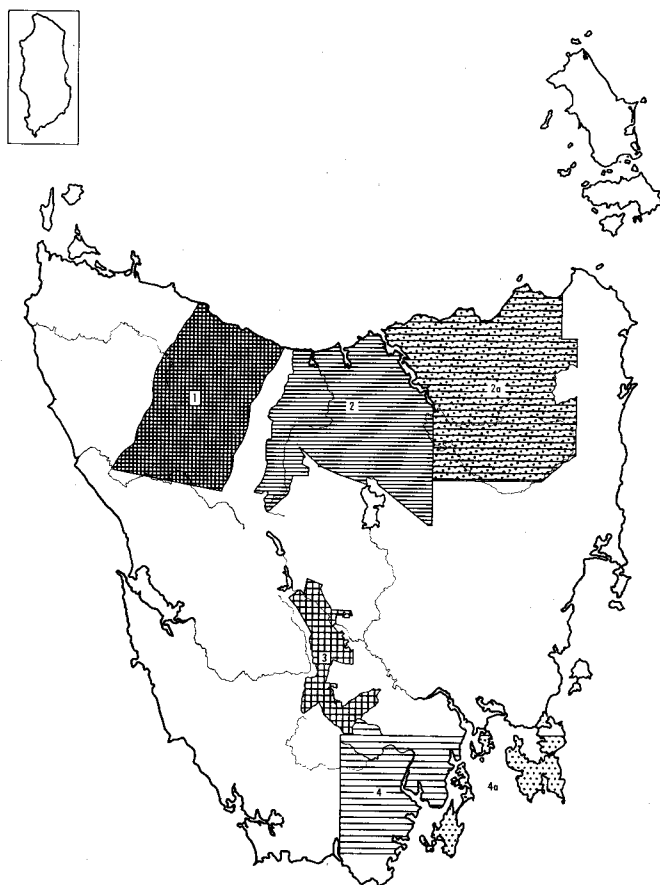
Two obvious examples of multiple use are as follows: (i) pulpwood obtained as a by-product from mill-logging; (ii) waste from sawmilling operations used as a raw material in pulp and hardboard making. Despite this rational approach to more complete utilisation of timber resources, supplies are not inexhaustible and the Commissioners sounded this warning note in their 1964 report: "In Tasmania, as well as in all the other States which depend on native forests for the supply of sawn timber, sawmilling is now dependent on the capacity of the industry to produce timber of acceptable grades and at acceptable prices from trees of lower quality than have been used in the past. Accessible virgin forests are dwindling. The problem is to maintain existing levels of production until advanced regrowth and softwood plantations can bridge the gap."

Employment in Forestry and Milling

The table that follows shows employment at the 30th June in forestry and in associated milling activities for a four-year period:

Persons Employed in Forestry and Milling at 30th June

Particulars	1961	1962	1963	1964
Persons Employed by Forestry Commission—				
Professional Staff (Foresters, &c.)	33	32	35	39
Non-professional Field Staff	85	87	96	94
Clerical Staff	80	85	88	85
Other Labour	230	298	341	399
Other Persons Working in Forestry and Milling—				
Professional Staff (Foresters, &c.)	12	15	14	13
Non-professional Field Staff	31	34	36	38
Clerical	17	23	22	24
Extraction (felling, carting, &c.), Milling (sawing, peeling, slicing or pulping)	5,265	4,831	5,463	5,797
Other Labour	126	128	116	136
Total	5,879	5,533	6,211	6,625



Disposition of timber concession areas

(1), (2) and (2a) : A.P.P.M.

(3) : A.N.M.

(4) and (4a) : A.P.M.

In the previous employment table, the extraction of forest products (felling, carting, &c.) and their processing (sawing, peeling, slicing or pulping) are treated as associated activities; however, for purposes of estimating value of production, the two types of activity are treated separately as indicated in the following section dealing with definitions.

Definition of Forest Production

The cutting of logs in a forest and the production of sawn timber in a mill seem closely related activities and may both, in fact, be conducted by a single operator with the same team of employees; similarly, the cutting of pulpwood and its later conversion to newsprint or fine paper may be viewed, in a broad sense, as a single activity. For statistical purposes, however, sawmills, paper mills, newsprint mills, &c. are classified as factories and the raw materials on which they operate—logs, &c.—are treated as the product of the forestry sector of primary industry. It necessarily follows that the definition of forest production must be restricted to include only the output of logs, hewn timber, firewood, tanning bark, &c. before such products have passed into the sector covered by factory statistics (e.g. logging is a forestry activity, sawmilling a factory activity). Some forestry products, as just defined, (e.g. fence posts and rails, hewn sleepers, firewood, &c.) may go direct to the final consumer without passing as a raw material to the factory sector.

Subsequent tables dealing with forest production give details of quantity and value; the following definitions apply:

Measurement of Volume

There are three convenient units for expressing the volume of timber, namely cubic feet, true super feet and hoppus super feet. The volume in true super feet can be derived from this relationship:

- (i) Volume in true super feet = Volume in cubic feet \times 12. (A true super foot is the volume equivalent to a solid body, one foot long by one foot wide by one inch thick.)

The remaining measure, hoppus super feet, is used in the forest to record log volumes and is derived from the following formula for dealing with round timber:

- (ii) Volume in hoppus super feet = (One quarter the average girth in inches) squared, the result being multiplied by the length in feet and divided by 12.

The relationship between hoppus super feet and true super feet can be stated as follows:

$$(iii) \frac{\text{Volume in hoppus super feet}}{\text{Volume in true super feet}} = \frac{\pi}{4} = 0.7854$$

In this section, the volume of logs, timber, etc. is expressed in true super feet, some data originally received in terms of hoppus super feet having been converted.

Value of Forest Production

Gross Value of Production is the value placed on the recorded production at the wholesale price realised in the principal markets. In cases where forestry products are consumed at the place of production or where they become raw

material for a secondary industry, these points of consumption are presumed to be the principal markets (e.g. the value of logs cut for sawmilling is the value on the mill skids, analogous to "value at the factory door" for the input of raw materials in general factory statistics).

Local Value (i.e. gross production valued at the place of production) is ascertained by deducting marketing costs from gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

In other production sectors, local value of production is further reduced by subtracting the value of materials used in the process of production, the final figure being *net value of production*. In the forestry sector, however, these data on the cost of materials are not available and therefore the only two measures available are: (i) gross value of production, and (ii) local value of production. (In logging operations, a principal material used in the process of production is fuel used in motor-driven saws, haulage vehicles and haulage equipment.)

Source of Production Data

The principal source of data are the returns of the various establishments classified as factories (e.g. sawmills, newsprint mills, paper mills, plywood mills, etc.) and these establishments report their log input, their pulpwood input or their input of sawmill edgings and offcuts; other data are available from the State Forestry Department and from the Bureau's own trade statistics showing exports.

Statistics of Forest Production

The following table shows details of forest production in 1963-64, dissection between Crown and private land being available for log and firewood production:

Forest Production, 1963-64

Product	Obtained From—		Total
	Crown Land	Private Land	
Logs for sawing, peeling, slicing or pulping—			
Forest hardwoods ('000 sup. ft.)	441,982	183,477	625,459
Indigenous softwoods ('000 sup. ft.)	3,215	77	3,292
Plantation grown pines ('000 sup. ft.)	13,045	7,360	20,405
Total logs—quantity .. ('000 sup. ft.)	458,242	190,914	649,156
gross value .. (\$'000)	(a)	(a)	11,459
Hewn and other timber (not included above)—			
Firewood (weight) ('000 tons)	31	379	410
Other (gross value) (b) (\$'000)	(a)	(a)	398
Gross value of hewn and other timber (\$'000)	(a)	(a)	2,227
Other forest products (gross value) (c) .. (\$'000)	(a)	(a)	13
Total gross value of forest products (\$'000)	(a)	(a)	13,699

(a) Available only in total.

(b) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles, &c.

(c) Principally bark for tanning.

In the previous table, log production is a composite figure including the log input of sawmills and the log equivalent of cords of pulpwood taken into paper mills and newsprint mills.

Production Summary

The next table shows details of forest production for a four-year period on a basis comparable with the 1963-64 analysis:

Forest Production

Product	1960-61	1961-62	1962-63	1963-64
Logs for sawing, peeling, slicing or pulping—				
Forest hardwoods .. (mill. super. ft.)	603.8	510.9	567.9	625.5
Indigenous softwoods (mill. super. ft.)	4.0	4.8	2.5	3.3
Plantation grown pines (mill. super. ft.)	9.9	11.5	13.8	20.4
Total logs—quantity (mill. super. ft.)	617.7	527.2	584.2	649.2
gross value .. (\$'000)	10,791	9,214	10,724	11,459
Hewn and other timber (not included above)—				
Firewood (weight) .. ('000 tons)	374	419	418	410
Other (gross value) (a) .. (\$'000)	494	611	440	398
Gross value of hewn and other timber (\$'000)	2,315	2,490	2,384	2,227
Other forest products (gross value) (b) .. (\$'000)	26	16	18	13
Total gross value of forest products (\$'000)	13,132	11,720	13,126	13,699

(a) Includes sleepers, transoms, girders, bridge timbers, mining timber, poles, piles, &c.

(b) Principally bark for tanning.

Tasmanian and Australian Log Production

In the previous table, log production is defined as relating to "logs for sawing, peeling, slicing or pulping", (i.e. it includes logs destined for sawmills and also the log equivalent of pulpwood for processing in newsprint mills, paper mills, &c.). In terms of this definition, Tasmania is a major producer, the State's log production approaching 17 per cent of the Australian total in 1963-64; the ranking of the major producers was Victoria with 24.0 per cent and N.S.W. with 22.4 per cent. Considering Tasmania's small relative size and population, it is apparent that forest production is one of its more important contributions to the Australian economy.

Summary—Gross and Local Value of Production

The following table gives details of gross and local values of forestry production for a four-year period:

Gross and Local Value of Forestry Production (\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64
Gross Value (Gross Production Valued at Principal Markets)	13,132	11,720	13,126	13,698
Less Marketing Costs	1,662	1,540	1,812	2,060
Local Value (Gross Production Valued at Place of Production)	11,470	10,180	11,314	11,638

Values Derived From Factory Processing

For statistical purposes, some forest products are treated as passing through two sectors, namely (i) the forestry sector of primary production, and (ii) the factory sector. This treatment is necessary to the extent that the finished

product of one sector may become the raw material of another (e.g. logs from the forestry sector pass to sawmills in the factory sector). To view the timber industry as a whole, it is necessary to take account of factory processing. The next table shows details of processing in the two most important factory sub-classes, namely sawmills and paper mills:

Factory Processing of Forest Products, 1963-64
Factory Class X, Sub-class 1—Sawmills
Factory Class XII, Sub-class 9—Paper Making

Item	Sawmills	Paper Making	Total
Factories Working (No.)	305	4	309
Average Workers (a) (No.)	2,754	3,373	6,127
Value of Output (\$'000)	23,952	41,114	65,066
Value of Production (b) .. (\$'000)	9,366	20,677	30,043

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

The previous table does not include factory sub-classes X-2 (plywood mills), X-10 (wall and ceiling boards) or minor processors of untreated forest products; total values of output and production would be increased as much as five per cent by their inclusion. (Fuller details of factory processing appear in Chapter 8, "Secondary Industry—Manufacturing".)

Timber and Timber Products

Mill Production of Timber

Particulars of logs treated and the production of sawn, peeled and sliced timber by sawmills and plywood mills are shown in the following table; the figures have been compiled from the annual factory collections and show the geographical distribution of milling activity (pulpwood treatment is excluded):

Logs Treated and Sawn Timber Produced, 1963-64

Statistical Division	Logs Treated (True Volume)		Sawn, Peeled or Sliced Timber Produced
	Quantity	Proportion of Total	
	'000 super ft.	Per Cent	'000 super ft.
South Central	14,183	3.2	6,524
North Central	29,949	6.8	11,267
North West	146,302	33.2	54,570
North East	69,107	15.7	25,971
North Midland	33,053	7.5	12,282
Midland	53,594	12.2	19,929
South East	21,791	4.9	9,354
Southern	61,191	13.9	25,779
Western	11,161	2.6	5,181
Total	(a) 440,331	100.0	170,857

(a) Hardwood logs, 425,219,600 super feet; softwood logs, 15,111,400 super feet; approximately 20 per cent of softwood logs were indigenous, the balance coming from plantations.

In the previous table (from which the pulpwood cut for paper mills is excluded), the principal centres of sawmilling activity are shown to be the North West, the North East, the Southern and the Midland Statistical Divisions.

These are the Divisions in which the major part of the State Forests is located. If pulpwood cutting were taken into account, the only effect would be to further emphasise the relative importance of these areas in which the major pulpwood concessions also are located.

Output and Exports

The following table shows timber production by mills for a four-year period, together with exports of sawn timber:

Production and Exports of Sawn Timber

Particulars	1960-61	1961-62	1962-63	1963-64
LOGS TREATED ('000 Super Feet)				
Hardwood	408,475	364,187	397,705	425,220
Softwood	13,899	13,207	15,568	15,111
Total	422,374	377,394	413,273	440,331

SAWN, PEELED OR SLICED TIMBER PRODUCED FROM LOGS ABOVE (a) ('000 Super Feet)

Hardwood	159,399	142,767	153,729	164,946
Softwood	5,135	6,218	6,135	5,911
Total	164,534	148,985	159,864	170,857

VALUE OF TIMBER AT ROUGH SAWN STAGE (\$'000)

Total	13,937	12,989	12,788	14,317
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EXPORTS OF SAWN TIMBER (b) ('000 Super Feet)

Total	63,421	56,800	60,591	71,398
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VALUE OF EXPORTS OF SAWN TIMBER (b) (\$'000)

Total	9,553	8,589	9,858	11,175
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(a) Rough sawn timber including that subsequently dressed to produce flooring, weather-boards, &c.

(b) Includes dressed and undressed timber.

Comparison

In the treatment of logs as defined in the previous table (i.e. basically of logs for sawmilling), Tasmania contributed 13.0 per cent to the Australian total in 1963-64. The Tasmanian volume of logs treated was below that of all States except S.A. but its production of sawn, peeled or sliced timber far exceeds the demand generated by its relatively small population, a factor which accounts for considerable Tasmanian interstate exports of timber.

Employment

The next table shows the number of sawmills and the number of persons employed:

Number of Sawmills and Persons Employed (a)

Particulars	1960-61	1961-62	1962-63	1963-64
Number of Sawmills	326	327	322	305
Average Number Employed During Year—				
Males	2,661	2,548	2,560	2,701
Females	53	53	37	53
Persons	2,714	2,601	2,597	2,754

(a) In mills; excludes those engaged on logging operations.

Production of Wood Pulp and Paper

Details of paper and newsprint production are not available for publication but wood pulp figures are an indicator of activity.

Wood pulp is the basic material in the production of paper, newsprint, &c. and is made by any one of three processes, namely mechanical, chemical, or mechanical and chemical combined; the last process is referred to as "semi-chemical". The basic technological problem in producing satisfactory pulp from some eucalypt species, and from some other pulpwoods, was related to the relative shortness of their wood fibre; in the semi-chemical process, the preliminary chemical treatment of the wood reduces the amount of grinding required and thus prevents excessive fibre destruction. The following table shows production of this material over a four-year period, together with employment details for the industry:

Factor Class XII, Sub-Class 9—Paper Making

Particulars	1960-61	1961-62	1962-63	1963-64
Number of Establishments	3	3	4	4
Average Number Employed During Year—				
Males	2,651	2,631	2,727	2,863
Females	442	411	471	510
Persons	3,093	3,042	3,198	3,373
Wood Pulp Produced (a) .. (Tons)	116,785	116,082	136,188	157,413

(a) Ground wood pulp, chemical and semi-chemical pulp.

In the previous table, figures for wood pulp should be regarded only as an index of production since the pulp is an "intermediate" product which has still to be converted to fine paper, newsprint, &c.

Role of the Forestry Commission

The State Forestry Commission is primarily concerned with the conservation of Tasmania's forests; this requires that it should exercise control over the rate at which logs and pulpwood are taken, and also that it should introduce effective measures to ensure regeneration. Other important functions include:

(i) fire prevention and suppression; (ii) road construction to give access to forests; (iii) development of plantations. Some concept of the scope of Forestry Commission activities can be obtained from the following table:

Summary—Activities of Forestry Commission (a)

Particulars	1960-61	1961-62	1962-63	1963-64
Production of Seedlings .. ('000)	1,772	1,333	803	823
Plantations—				
Established (acres)	1,039	935	1,224	1,235
Pruned (acres)	2,721	1,899	3,538	3,178
Thinned (acres)	163	235	366	489
Firebreaks—				
Constructed (miles)	28	106	47	105
Secondary Roads—				
Constructed (miles)	17	68	59	77
Improved (miles)	..	55	27	12
Major Roads—				
Constructed (miles)	17	24	25	24

(a) Source: Reports of Forestry Commission.

At 30th June, 1964, the Forestry Commission was responsible for the maintenance of 1,277 miles of major and secondary forest access roads; of this total, 1,033 miles had been constructed by the Commission, the balance by sawmillers.

Fire Protection

The Commission has a responsibility for preventing and fighting forest fires; losses through bush fires are reported in the following table:

Bush Fires (a)

Year	Fires Reported	Area Burnt				Cost of Suppression
		State Forest	Other Crown Land	Private Property	Total	
	No.	Acres	Acres	Acres	Acres	\$
1960-61	479	119,439	224,160	91,045	434,644	252,346
1961-62	137	7,760	15,982	4,162	27,904	21,316
1962-63	126	6,001	11,640	17,641	35,282	17,918
1963-64	252	19,706	35,352	11,460	66,518	72,624

(a) Source: Report of the Forestry Commission.

Finances of the Forestry Commission

The main revenue of the Forestry Commission is derived from royalties, i.e. charges paid by those taking timber from Crown lands. By law, such revenue is specifically reserved for expenditure on forestry. The next table has been compiled to show the revenue and expenditure of the Commission for the last four years; expenditure exceeds revenue since money from State loan funds devoted to forestry purposes is included in expenditure.

Forestry Commission—Revenue and Expenditure
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64
REVENUE				
Royalties	1,048	910	1,007	1,115
Sale of Forest Products	4	29	45	61
Other	23	25	37	35
Total	1,075	964	1,089	1,211
EXPENDITURE (a)				
Administration—				
Revenue Collection	94	120	128	136
Forest Management	346	374	375	383
General	245	279	331	391
Forest Works—				
Road Construction	365	433	451	763
Building and Other	53	51	66	38
Afforestation and Reforestation	387	181	287	293
Forest Protection (n.e.i.)	203	329	298	225
Mapping and Surveys	61	38	45	52
Land Purchases	7	4	5	9
Purchase, Plant and Equipment	16	60	68	96
Total	1,777	1,869	2,054	2,386

(a) Aggregate expenditure from all sources, i.e. Consolidated Revenue, Loan and Trust Funds.

MINING

Introduction

For statistical purposes, mining is taken to cover the operations normally thought of as mining and quarrying (i.e. the removal from underground or surface workings of ores, &c.), the recovery of minerals from ore dumps, tailings, &c. and ore dressing (i.e. concentration and other elementary treatment). It does not include the smelting and/or refining of metallic minerals or the processing of non-metallic minerals (e.g. limestone into cement). These are classified as manufacturing.

In the present Tasmanian economy, three metals have an important place: aluminium, produced at Bell Bay on the Tamar; zinc at Risdon near Hobart, and copper at Mt. Lyell on the west coast. In terms of the previous definition, the three metals are considered to be the output of manufacturing and only a small part of their value is attributable to the mining industry in Tasmania. In the case of aluminium, no Tasmanian ores or concentrates are used and no value accrues to the Tasmanian mining industry. A substantial part of the value of the aluminium is, in fact, accounted for by imported materials. Zinc is produced from both imported and locally-produced concentrates, but only the value of the local concentrates produced at Rosebery is included in the Tasmanian mining industry. Copper is produced entirely from locally-produced concentrates, the whole operation, from mining the ore to producing the refined copper, being integrated at the one location in the Mt. Lyell area. In this case, a division of the one establishment is made into mining (covering operations up to the concentration stage) and manufacturing (smelting and refining).

Source of Information

(i) Employment, Production Costs, Values of Output and Production, &c.—An annual census of mines and quarries is conducted by the Bureau of Statistics and details are collected for calendar years. The main table, covering materials used, salaries and wages, &c., is compiled for mines and quarries employing four or more persons, thus achieving uniformity with other Australian States. Value of output is shown in two ways, either for all mines and quarries, or for mines and quarries employing four or more persons.

(ii) Data appearing on quantities produced, assayed contents, &c. are obtained primarily from the State Mines Department, with supplementary information from the Bureau's annual census of mines and quarries and from the Commonwealth Bureau of Mineral Resources.

Importance of West Coast

The main mineral wealth of the State is derived from mines on the west coast, the chief centres being Queenstown (copper ores) and Rosebery (zinc-lead ores). The region lies generally within the belt of heaviest rainfall and is in the most rugged and mountainous part of the island. Vegetation reflects the heavy rainfall; Charles Gould's geological party in 1862 took 25 days to cover barely 15 miles from the Queen River to Strahan—and they were hurrying, not prospecting.

Mining towns rise and fall, the two obvious Tasmanian examples being Waratah and Zeehan. The great Bischoff tin mine explains the foundation of Waratah, galena and silver mines of Zeehan; as production declined, so did these towns. Queenstown still holds its population despite 70 years of constant exploitation of the copper ores in the region. The full account of the opening up of this very difficult country is obviously beyond the scope of this chapter but a chronology follows giving details of some of the principal events; 1936 is used as a terminal date because this was the year in which the Rosebery mines re-opened.

West Coast Mining Chronology

- 1642 Tasman sighted Mt. Heemskirk and Mt. Zeehan, his erratic compass suggesting that an iron mass lay somewhere to the east.
- 1798 Bass and Flinders circumnavigated Tasmania, naming the peaks of Heemskirk and Zeehan after Tasman's vessels.
- 1815 James Kelly circumnavigated Tasmania in an open whale boat, discovering Port Davey and Macquarie Harbour.
- 1821 Convict settlement established in Macquarie Harbour to use timber for ship building; closed down 13 years later.
- 1862 Charles Gould, the government geologist, sent on search for gold; entered the Linda Valley and camped close to the Iron Blow (the outcrop which eventually started the Mt. Lyell copper boom). He found small traces of unpayable gold and named the principal peaks in the area—Owen, Jukes, Sedgwick, Huxley, Darwin and Lyell.
- 1871 James Smith discovered tin at Mt. Bischoff. Activity in this area provided a base for penetration by land from the north.
- 1875 Tin smelters fired at Launceston to handle Mt. Bischoff tin.
- 1876 Charles Sprent crossed Pieman River, finding tin and gold near Mt. Heemskirk.

- 1878 Tin mining commenced at Heemskirk.
- 1879 Opening up of the Pieman gold-fields.
- 1881 Trial Harbour established as a port for the mining fields. Cornelius Lynch struck gold five miles from Mt. Lyell.
- 1882 Frank Long discovered silver-lead ore near Zeehan.
- 1883 Western miners on four fields—Mt. Bischoff (tin), the Pieman (gold), Heemskirk (tin) and King River (gold). The McDonough brothers (known as the Cooneys) and Johannes Karlson discovered the Iron Blow near Linda Creek in the Mt. Lyell area.
- 1885 The Iron Blow blasted in search for reef gold.
- 1888 The Mt. Lyell Gold Mining Company formed to work the Iron Blow. Silver boom filled Zeehan-Dundas area with syndicates and companies.
- 1889 Steam mill used to crush ore from the Iron Blow and produce gold.
- 1890 Government commenced construction of three foot six inch gauge railway Strahan to Zeehan, since Trial Harbour was unsatisfactory as a port.
- 1891 159 companies and syndicates in the Zeehan-Dundas silver fields. Collapse of first silver boom due to general financial crisis, bank failures, &c. The owners of the Iron Blow gold mine decided to sell out to investors interested in its possibilities as a copper mine.
- 1892 Mt. Lyell Mining Company carried out first copper smelting trials on Iron Blow ore.
- 1893 Formation of Mt. Lyell Mining and Railway Company Ltd. Discovery of complex zinc-lead ores at Rosebery; smelting technology later defeated by zinc content.
- 1894 Iron Blow copper mine yielded large pocket of high grade silver ore, giving a return sufficient to allow further development.
- 1895 Robert Carl Sticht supervised installation of copper smelting plant brought into Mt. Lyell before rail communication established to Macquarie Harbour.
- 1896 Sticht's copper smelting technique successful.
- 1897 Official opening of copper smelters and of Mt. Lyell railway from mines to Teepookana on the King River. Great copper boom in progress with dozens of companies capitalising on the name "Lyell", e.g. Mt. Lyell Anaconda, Mt. Lyell Comstock, Mt. Lyell Tharsis, &c. Bar at Macquarie Harbour entrance gave depths of only nine to 11 feet. Teepookana the chief port for the Lyell mines.
- 1898 Strahan Marine Board formed with commission to deepen the entrance to Macquarie Harbour. Three major railway constructions under way, each operator hoping to monopolise transport to the fields; Mt. Lyell company, with the unfinished linking of Teepookana to Strahan; the North Mt. Lyell company, building from Linda to Kellys Basin; the Emu Bay company pushing its line south from Waratah. In the same year, smelters were established at Zeehan, main prize being silver. The Mt. Lyell company put out nearly 5,000 tons of blister copper, in addition to recovering large quantities of gold and silver.
- 1899 Completion of Mt. Lyell line through Teepookana to Strahan. West coast mining areas had a peak population approaching 25,000 persons, railway construction employing many workers.

- 1900 Completion of North Mt. Lyell railway from Linda to Kellys Basin. Emu Bay line linked to Zeehan by junction with Dundas line. Over-capitalisation obvious in transport: Zeehan fields with two railways linked to two ports (Strahan and Burnie); Lyell fields with two railways linked to three ports (Strahan, Burnie and Kellys Basin). Mt. Lyell company produced nearly 10,000 tons of copper.
- 1901 Census established that, of State's eleven largest cities and towns, four were West Coast mining centres and two were ports serving the area. North Mount Lyell copper smelting operations at Crotty a failure.
- 1902 Sticht smelted Mt. Lyell copper without use of coke, i.e. he perfected pure pyritic smelting. Later operations used coke in very small quantities.
- 1903 Amalgamation of Mt. Lyell and North Mt. Lyell companies. Close-down of smelters at Crotty and use of Strahan as port in preference to Kellys Basin. Mixture of Iron Blow ore with North Mt. Lyell ore improved smelting operations.
- 1905 Export of pyritic ore for superphosphate manufacture at Yarraville.
- 1909 Smelters at Zeehan closed down for lack of suitable silver ore. Galena lodes not payable below the 600 foot level.
- 1911 Zeehan smelters re-opened but problem of profitably smelting silver ores with high zinc content still not solved.
- 1914 Generation of hydro-electric power at Lake Margaret by Mt. Lyell Co. and electrification of much machinery at copper refineries.
- 1918 First refined zinc produced at Risdon near Hobart by Electrolytic Zinc Company—basic concentrates imported from Broken Hill mines in N.S.W.
- 1922 Earlier direct copper smelting method at Mt. Lyell replaced by flotation process for concentration prior to smelting. Copper prices so low that many producers in Australia and overseas closed down but Mt. Lyell kept working.
- 1925 Electrolytic zinc process at Risdon started to use Rosebery zinc concentrates.
- 1928 First cathode copper produced by electrolytic process at Mt. Lyell.
- 1930 Mining of Rosebery zinc-lead ores suspended due to low world price of zinc.
- 1932 Completion of direct road link, Hobart to Queenstown.
- 1936 Resumption of Rosebery mining on larger scale.

While this account of events on the west coast gives some background to the present production of copper and zinc, it fails to record activity in other parts of the State or to cover the mining of numerous other minerals. The next section deals with each product separately and on a State basis.

Historical

Supply and Demand

While Tasmanian farm and factory activity over the years has displayed, in the main, an orderly pattern of growth, mining activity has been subject to frequent and severe fluctuations, the result of changes in supply and demand as reflected in the market price of particular metals. Examples of factors contributing to this relative instability are: (i) *Supply*—the possible fall in prices when major fresh discoveries are worked in other countries; (ii) *Demand*—the possible rise in prices when war, or fear of war, leads to large-scale purchases

of particular metals; (iii) *Technological change*—for example, the invention of the ball point pen; osmiridium, used for tipping fountain pen nibs and once produced in large quantities in Tasmania, suffered a resulting decline in value.

Definition of Mining

Unfolding the record of the various minerals produced in the State is made difficult by the manner in which previous official mining statistics were compiled. In current statistics, a distinction is made, in broad terms, between mining a mineral and subsequently refining it to obtain its metallic content—the second process is treated as manufacturing and included under Class IV in factory statistics. However, this distinction was not made in earlier statistics and therefore historical comparisons cannot be made with any accuracy. A further difficulty occurs with regard to the value of ores which, in older series, were valued, in the main, according to the world price for their estimated metallic content, irrespective of whether the extraction was carried out in Tasmania itself, in other States or in overseas countries. Thus the earlier historical value series is inflated and does not reflect the true earnings of mineral producers within the State. In the evolution of a proper basis for current mining statistics, the chief requirement was to satisfactorily define a border between mining and factory activities and, for Tasmanian data, this was not accomplished until 1952 when the Bureau of Census and Statistics conducted its first annual mining census.

Because of the definitional difficulties just listed, the historical account of mining in the State has been deliberately restricted largely to details of physical production, other measures such as employment, value of output, &c., not being comparable with those used in the current series commencing 1952.

Coal

Early Fields

The site of Tasmania's first mine was on Tasman Peninsula when the convicts from Port Arthur dug out 60 tons of coal in 1834. Highest production was 10,400 tons in 1840 but, within three years, the work ceased due to the poor quality of the coal and discoveries at other sites, namely Schouten Island and near Southport; in the 1850's further discoveries were made near Latrobe in the Mersey Valley and near Bicheno on the east coast. The island's principal coalfields eventually were opened up in the Fingal Valley in the north-east, and the following table shows the localities producing coal at the time of their discovery (1886):

Coal Production at Tasmanian Mines, 1885, 1886 and 1890
(Tons)

Locality (a)	1885	1886	1890
Mersey and Latrobe	2,114	1,400	3,778
Longford .. ..	..	1,230	1,000
Oatlands	700	600	600
Hobart (New Town)	460	936	..
Richmond (Jerusalem)	1,320	605	600
Kingborough	560	500	150
Franklin (Port Cygnet)	1,500	1,300	2,738
Fingal .. ..	..	3,820	44,946
Total	6,654	10,391	53,812

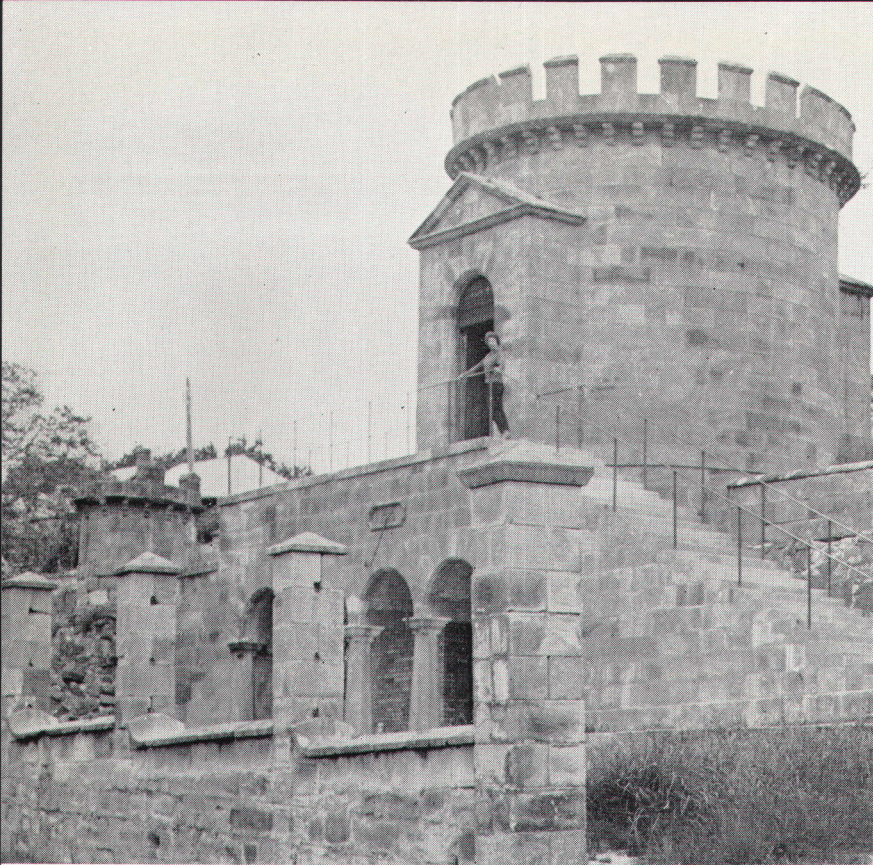
(a) Localities as listed in 1890 in "Statistics of Tasmania".



The Richmond Bridge built in 1823. (Tourist Bureau)

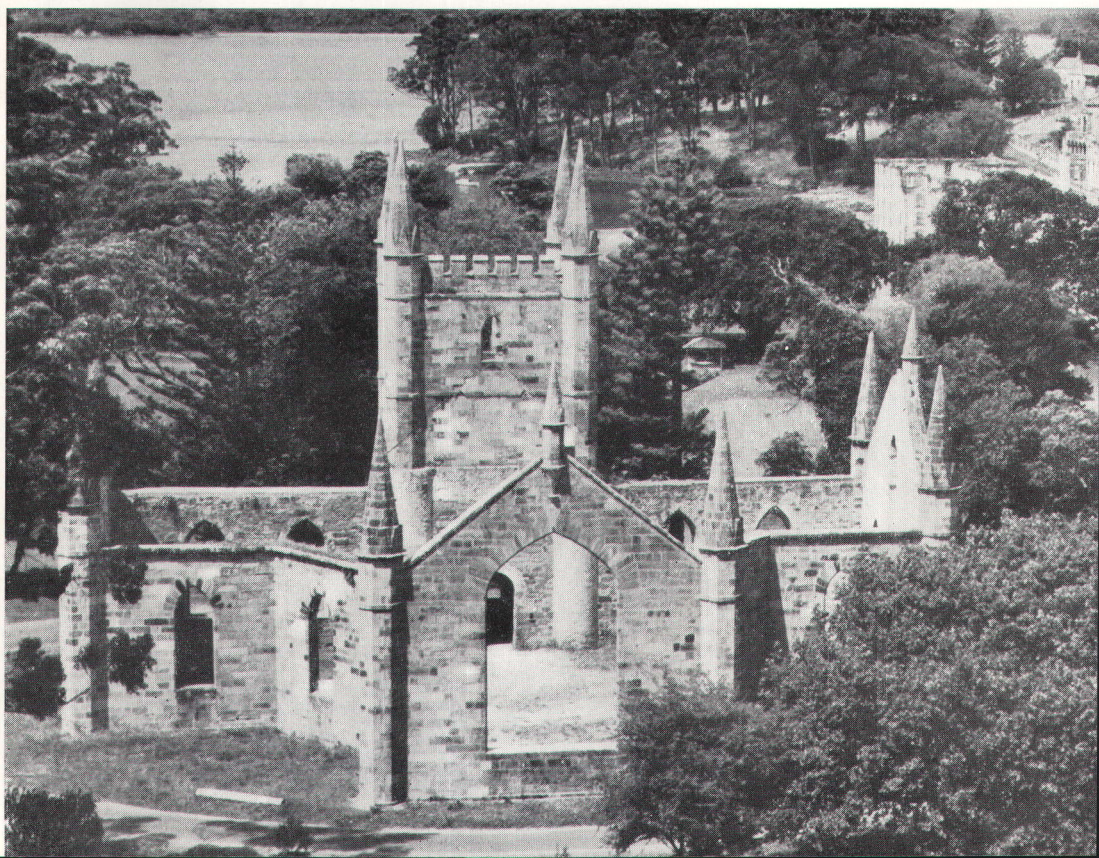


*Skagit log loader at work near Maydena in concession area held by Australian Newsprint Mills Ltd.
(The Mercury)*



*Powder Magazine at
Port Arthur.*

Old church at Port Arthur, with Magazine in background.



Decline in Production

By 1920, annual production had reached 75,000 tons; by 1950, it exceeded 220,000 tons. The peak production year was 1959-60 with an output of over 300,000 tons but, since then, there has been a decline due to competition from oil (the introduction of diesel locomotives contributed, in minor degree, to the fall in demand but the major factor has been a change from coal to oil fuel in manufacturing industries). Throughout this whole period, from 1886 till today, the mines of the Fingal Valley have been the State's principal source of coal.

The fall in the demand for coal had an adverse effect upon employment in the Fingal Valley, and resulted in an enquiry into the possibility of generating electric power from Tasmanian coal; the subsequent report was not in favour of thermal generation, and considered expansion of existing hydro-electric works the more economic proposition. The State Government has begun plantations of exotic pines in the valley, with the aim of absorbing some of the displaced miners into forestry work.

By Australian standards, the State's black coal production has never been on a large scale and even in the year of peak Tasmanian production (1959-60), it represented only one and a half per cent of the Commonwealth total to which N.S.W. contributed nearly 80 per cent. (This total excludes brown coal which is mined in very large quantities almost exclusively in Victoria.)

Gold

Introduction

The discovery of gold in payable quantities in the 1850's was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood". The major strikes, however, were confined to Victoria and, to a lesser extent, to N.S.W., so that, if gold then had any significance for Tasmania, it was in its attraction for prospectors. Searching for this one metal, often without success, they eventually discovered those other minerals from which the State's principal mining wealth is derived.

Early Fields

The first appearance of gold mining in *Statistics of Tasmania* dated from 1866 when crushing at Fingal in the north-east produced 347 ounces from 2,872 tons of quartz; alluvial mining is also mentioned with this footnote: "It is impossible to give the quantity and value of gold obtained from alluvial diggings, although there is reason to believe that those employed thereon are doing well". In actual fact, gold had been discovered much earlier, in slate rocks near Lefroy in 1849 and then at Mangana near Fingal in 1852, the second find setting off a minor gold rush to the alluvial diggings. The early miners were secretive and able to take their wealth out of the State without record.

During 1859 the first quartz mine started operations at Fingal; in the same year James Smith (better known as "Philosopher Smith") found gold at the River Forth, and Peter Lette at the Calder. Reef gold was discovered in 1869 at Lefroy by S. Richards. The first recorded returns from the Mangana fields date from 1870; Waterhouse, 1871; Hellyer, Denison and Beaconsfield, 1872; Lisle, 1878; Gladstone and Cam, 1881; Minnow and River Forth, 1882; Branhholm, 1883; and Mt. Lyell, 1886.

Throughout the rest of the 19th century, gold was produced at a variety of locations, including Mathinna, Lefroy, Fingal, Lisle, Mangana, Corinna and Hellyer but the largest single source was the "Tasmania Mine" at Beaconsfield which began operating in 1878. The effect of Beaconsfield operations can be judged from the following State gold production figures (in ounces): 1877, 5,777; 1878, 25,249; 1879, 60,155. Employment in gold mining in 1879 was stated to exceed 2,000 men. Peak gold production for the State was reached in 1899 with 83,992 ounces but this was still only a minor contribution—just over 2 per cent—to the Australian total; a year earlier, production in W.A. had, for the first time, exceeded that in Victoria. To set Tasmanian gold mining in its correct perspective, the following production figures (in '000 oz.) are quoted for the Commonwealth in 1903: N.S.W., 254; Victoria, 767; Queensland, 669; S.A., 21; W.A., 2,065; Tasmania, 60; total, 3,836 (1903 was the peak production year for both the Commonwealth and W.A.).

Ranked in order of accumulated yield, the State's three principal gold mining centres were Beaconsfield, Mathinna and Lefroy. The 20th century witnessed a decline in Tasmanian gold mining, as such; when the "New Golden Gate" at Mathinna closed in 1912, State annual gold production had fallen to 37,973 ounces. In 1919, with the closure of the "Tasmania Mine" at Beaconsfield, annual gold production fell to 7,686 ounces.

Present Production

Today there are no gold mines, as such, operating but gold is still produced as a by-product from other minerals, principally concentrates of lead-copper, copper, lead and zinc. It is something of a paradox that the Tasmanian gold yield, in relation to the Commonwealth total, is now relatively greater than it was in the days of "pure" gold mining. The assayed gold content of Tasmanian minerals mined in 1964 was 34,376 ounces, compared with a Commonwealth total of 964,000 ounces, i.e. the Tasmanian proportion had increased to 3.6 per cent.

Tin

Mt. Bischoff

Tasmania's early gold discoveries had been discouraging when compared with the rich sources uncovered in Victoria but, in 1871, Mr. James Smith took back to Table Cape a matchbox filled with ore for smelting by Mr. E. B. Walker (usually known as "Doctor" Walker). A contemporary engineer describes the outcome thus: "At this time no one knew what ore it was; but when the first button lay bright and shining before those present, the question was asked 'Is it silver?' which the old doctor, being an expert, soon settled. The full value of the discovery did not present itself to any of these gentlemen then, as no doubt they all would have liked silver in preference to tin".

The matchbox had been filled at Mt. Bischoff which investigation showed to be the greatest tin deposit then known in the world. It lay inland over 30 miles south-west from Burnie in rugged and inhospitable country, the immediate problem being to bring in equipment and to get the ore out to the coast. The first solution was a horse-drawn tramway, later to be replaced by the 48-mile Burnie-Waratah line, opened for traffic by the Emu Bay and Mount Bischoff Railway Company in 1884. It was an extension of this line to Zeehan at the turn of the century that gave the west coast mining areas a direct rail link to the north-west coast. Thus, the original tin deposits at Mt. Bischoff, quite apart from their vast yield of a valuable metal, also played a vital part in opening up communications to the remote west coast.

Some idea of the richness of Mt. Bischoff can be gained from the following company report appearing in *Statistics of Tasmania*, 1907:

"The Mount Bischoff Tin Mining Company, Registered.

Capital, £60,000 in 12,000 shares of £5 each, 4,400 paid up to £5 per share and 7,600 paid up to £1 per share.

Dividends paid to 31st December, 1907, £2,124,000 or £177 per share.

Yield of 66,562 tons, Tin Ore, valued at £4,181,698".

Before production finally ceased shortly after World War II, more than 80,000 tons of tin ore had been mined from Bischoff.

Other Fields

The Bischoff discovery was followed by numerous others, first in the north-east and then at Mt. Heemskirk on the west coast; many of the north-east deposits were alluvial. Main production today is centred near Avoca in the north-east and Renison Bell on the west coast; other sources now worked are at Storeys Creek, Port Davey, King Island, Flinders and Cape Barren Islands, Coles Bay and St. Paul's Valley.

Present Production

In 1964, the assayed tin content of tin concentrates produced throughout Australia was 3,642 tons, the Tasmanian component being 990 tons. Some concept of the earlier scale of Tasmanian tin mining can be obtained from these export figures: average annual Tasmanian exports of tin, decade ending 1890, 3,800 tons; decade ending 1900, 2,650 tons. A mixture of export and production figures in the decade ending 1910 suggests that tin production had lifted to an annual average of 3,350 tons. In 1920, annual production fell to 1,310 tons and, since then, has often been below 1,000 tons with no indication of any return to the high levels recorded up to 1918 (when annual production was 1,580 tons).

Renison Bell Expansion Programme

The Renison Bell tin mine on the west coast was first worked in 1905, has closed down on a number of occasions, but is now engaged in an expansion programme which includes the building of workers' homes at near-by Zeehan; this town had suffered from the closure of the adjacent silver mines before World War I.

Silver

Early Fields

The discovery of tin at Mt. Heemskirk in 1875 encouraged the notion that here was a second Mt. Bischoff and a mining boom followed, only to collapse when the ores were found to be of a very low grade. The lure of tin, however, had brought prospectors into the area and silver-lead ore was found near Zeehan in 1882; six years later, the Zeehan-Dundas area was invaded by numerous syndicates in search of silver. The optimism of the period was reflected in the Tasmanian Government's decision to commence construction of a Zeehan-Strahan railway in 1890, Trial Harbour being too exposed a port to serve the new fields.

In 1891, there were 159 companies and syndicates operating in the Zeehan-Dundas area when a general financial crisis halted most operations. The set-back was only temporary and in 1898 a smelting plant was installed at Zeehan, over 20,000 tons of silver-lead ore being mined annually. Although the fields initially gave rich returns of silver, the ore was not comparable with that at Broken Hill and could not be obtained in payable quantities below the 600 foot level. Silver is also present in the complex ores mined at Rosebery but

the high zinc content defeated most early efforts to extract payable metals profitably. By 1909, the smelters at Zeehan closed down for lack of ore to process.

Present Production

The State still produces silver today but mainly as a by-product of copper mining at Mt. Lyell and zinc-lead mining at Rosebery; "pure" silver-lead mining is carried on at Tullah but there is no silver production from the once famous Zeehan fields. In 1964, the assayed silver content of Tasmanian mine production was 1,780,000 ounces, just under 10 per cent of the corresponding Australian total. N.S.W. and Queensland are the leading producers.

Copper

Mt. Lyell

The mining of Tasmanian copper at Mt. Lyell dates from the 1890's, the original source of ore being the Iron Blow near Linda Creek; this outcrop had been developed without much success as a gold mine after its discovery in 1883. The problems of exploitation were difficult, the complete lack of road or rail communication with Macquarie Harbour being the most challenging. Although dozens of companies and syndicates pegged claims on the Lyell fields, only two—the Mount Lyell and the North Mount Lyell—had the necessary capital to face up to the problem of transport, each deciding to build a railway to its own chosen port on the harbour. By 1900, each company had its own line, the Mt. Lyell running to Strahan, the North Mount Lyell to Kellys Basin. The absurdity of two railways and two ports serving the same field was ended in 1903 when an amalgamation occurred.

The Mt. Lyell operations were notable for a metallurgical discovery of world importance when Robert Sticht smelted copper in 1902 without use of coke, relying on the sulphur content of the pyritic ores and using a cold forced air draught in lieu of the accepted hot air method. Successful low cost smelting played a large part in establishing the industry. At the turn of the century, Mt. Lyell, with its annual output of 10,000 tons or so of copper, was the leading Australian producer; since then, other important fields in Australia have been developed and its relative importance has declined even though its annual output of copper has actually increased. For a mining field, Mt. Lyell has shown remarkable stability over its seventy years of exploitation. As the original rich finds were worked out, improvements in handling and recovery allowed the profitable processing of lower grade ores, and successful operations continue today using some ores of less than one per cent average copper content—a task impossible with the techniques available at the turn of the century. Open cut mining has been, and still is, a widely-used method although underground mining is also in progress.

Present Production

In 1964, the assayed copper content of Tasmanian mineral production was 14,879 tons, or about 14 per cent of the corresponding Australian total, Queensland being the principal producing State. Over 90 per cent of the Tasmanian total derives from Mt. Lyell ores but there is also a copper content in the ores mined at Rosebery and Williamsford.

Zinc

Rosebery

The present township of Rosebery 20 miles north of Queenstown supports a population of nearly 2,000, the principal activity being the mining of zinc ores for treatment at the Electrolytic Zinc Company's Risdon plant

near Hobart. It is therefore paradoxical that, from the discovery of zinc-lead ores near Mt. Read in 1894 until the early 1920's, the large percentage of zinc found in the region's minerals should have been the main bar to successful development of the field. Early penetration had sprung from the search for gold but once treatment of the complex Rosebery ores was attempted, the smelting techniques then available were not capable of recovering the zinc; lead, gold and silver were the metals recovered but removal of the zinc, a complete waste, made the process costly.

Risdon

In 1914, the war prevented the shipping of N.S.W. Broken Hill zinc concentrates to German and Belgian zinc works and therefore the producers decided to establish their own refinery, selecting Risdon near Hobart as the site and planning to use hydro-electric power generated from the Great Lake. Tests were made on the complex Rosebery ores and methods evolved so that both lead and zinc could be efficiently recovered. At first the Risdon plant operated on the imported Broken Hill concentrates but, by 1925, it had sufficient capacity to also process local ores brought from Rosebery. The Rosebery mines have been in continuous operation since 1925, apart from a temporary shut-down in the period 1930-1936 when depressed world zinc prices curbed production. While the primary aim is the production of zinc, by-products recoverable from the Rosebery and Williamsford ores include lead, copper, cadmium, gold and silver. In terms of total value of metallic content, the minerals mined in this area closely approach in importance those mined at Mt. Lyell.

Present Production

In 1964, the assayed zinc content of Tasmanian mine production was 50,155 tons, approximately 15 per cent of the corresponding Australian total; N.S.W. was the major producer of zinc bearing ores. (Tasmania is still the leading producer of refined zinc, the recovery process using both local and interstate concentrates. Production constitutes about 80 per cent of the Australian total.)

Lead

The mining fields at Zeehan and Dundas had been established with silver as the goal, silver-lead ores being the source; lead was produced as a by-product. Silver-lead mining has long since ceased on the Zeehan fields but is still in progress at Tullah, a few miles north-west of Rosebery.

Lead is also a constituent of the complex Rosebery and Williamsford ores and these are now the principal source of lead in the State. In 1964, the assayed lead content of Tasmanian mine production was 15,348 tons, about four per cent of the corresponding Australian total; N.S.W. and Queensland are the principal producers.

Tungsten

Tungstic oxide (WO_3) occurs in two forms: in scheelite (calcium tungstate) and wolfram (iron manganese tungstate). There is a marked distinction between the mining of scheelite and of wolfram. Whereas scheelite in Tasmania is mined mainly for its WO_3 content, wolfram is usually found in association with tin. Production of wolfram began in 1906 at Moina in the north-west but most

now comes from mixed tin-wolfram mines in the Avoca area. The tin-wolfram combination is a good basis for operations because producers can stockpile their wolfram concentrates when tungsten prices are unfavourable.

Production of scheelite has been carried out on King Island, first in the period 1917-1920, and then again from 1938 onward, apart from a short close-down in 1959. In recent years, prices were unfavourable and the industry was only able to survive with the help of a subsidy from the Tasmanian Government, the level of assistance being related to movements in world price. In 1964, the assayed tungstic oxide content of Tasmanian mine production was 993 tons; this was also the Australian total, Tasmania being the sole producer.

Sulphur

There are no known deposits of elemental sulphur in Australia, but its use is of vital importance in the heavy chemical and fertiliser industry, the principal form being as sulphuric acid. The sulphur content of the Mt. Lyell and Rosebery ores forms the basis for the manufacture of sulphuric acid. Mt. Lyell pyritic ore is concentrated and exported, while the Rosebery zinc concentrates are used to produce sulphuric acid as a by-product at the Risdon zinc plant. In 1964, the assayed sulphur content of Tasmanian mine production was 56,104 tons, approximately 16 per cent of the corresponding Australian total.

Iron Oxide and Iron Ores

Iron oxide is currently being mined at Penguin on the north-west coast for use mainly in the local manufacture of cement. Tasmania has large deposits of iron ore and in 1876, the British and Tasmanian Charcoal Iron Company established an iron works on the west bank of the Tamar; unfortunately the ores in that locality had a high chromium content, the resulting iron proved to be extremely brittle, and production ceased.

In 1956, the Tasmanian Department of Mines, in conjunction with the Commonwealth Bureau of Mineral Resources, commenced a series of geological and geophysical surveys followed by drilling. A large deposit at the Savage River was the subject of investigation by Australian-American interests, the project under review being the conversion of the ore to a slurry and its transfer by pipe-line and pumping to Brickmakers Bay, near Stanley, for shipment to Japanese ports in pellet form.

The Savage River Iron Ore Scheme

In November, 1965, Pickands Mather and Co. International and Mitsubishi Shoji Kaisha Ltd. agreed to proceed with a plan for the export of Savage River iron ore to Japan. The cost of installing the necessary plant is estimated at \$62,000,000 and the target date for the start of concentrating the ore is late in 1967.

The ore deposit on the Savage River lies south-west of Mt. Bischoff in rugged country without easily accessible roads or railways; the west coast is not far from the field but no suitable harbour is available on shores open to the persistent westerly swell. The two possible outlets were Macquarie Harbour and a port site on the north-west coast—the deposit lies roughly equidistant between these points. The eventual decision was to construct a port on the north-west coast at Brickmakers Bay, and to link the ore field to the port by pipe line.

Although the basic aim is to export the ore, processing will be necessary in the State, both at the ore field and at the port. The crude ore will be mined by open-cut methods with power shovels and special trucks. At this stage, the ore will be ground to a powder and then magnetically separated from the waste; this concentration will convert the ore from its crude form—about 38 per cent iron—up to an estimated 67 per cent. The necessary electricity for this process will come from the State Hydro-Electric Commission's grid. The concentrate will then be mixed with water and pumped 52 miles to Brickmakers Bay; there it will be dried out and rolled into small balls which will be heated to high temperatures to make them into hard pellets. The final product—pellets—will then be shipped from a special pier to be constructed at Brickmakers Bay. (The new terminal has been named Port Latta.)

STATISTICS OF MINERAL PRODUCTION

Source of Data

Statistics relating to quantities of minerals produced (including assayed metallic content) are, in the main, obtained from the State Mines Department and are supplemented, where necessary, with data obtained from the annual census of mines and quarries conducted by the Bureau of Statistics, and from the Commonwealth Bureau of Mineral Resources.

Metallic Minerals

The table that follows shows the quantity of metallic minerals produced in Tasmania for a five-year period. In general, the minerals are shown as concentrates except the item reading "copper ore", and this does not refer to the total copper ore mined but only to that portion fed direct to the smelters without passing through the concentration process.

Metallic Minerals—Production

Mineral	Unit	1960	1961	1962	1963	1964
Copper Concentrate ..	Tons	46,760	48,976	49,361	55,405	49,463
Copper Ore	Tons	758	7,619	9,882	10,394	10,215
Copper Precipitate ..	Tons	26	16	13	22	51
Gold (not in Concentrates)	Ounces	308	446	417	181	106
Iron Oxide	Tons	3,497	2,309	4,082	4,221	6,808
Lead Concentrate ..	Tons	14,790	12,345	13,742	16,321	14,853
Lead-Copper Concentrate	Tons	6,797	8,057	11,192	9,309	10,214
Pyrite Concentrate ..	Tons	67,764	51,020	8,373	19,463	46,166
Tin Concentrate ..	Tons	1,233	1,217	1,507	1,435	1,438
Tungsten Concentrates- Scheelite Concentrate	Tons	420	1,017	988	958	1,016
Wolfram Concentrate	Tons	1,106	1,117	488	394	380
Zinc Concentrate ..	Tons	31,625	36,990	44,382	44,871	84,791

Assayed Content

In the following table, the various concentrates have been grouped to show their content in terms of individual metals. The contents stated are as determined by assay and include all pay metals and metals which are a refiner's prize; totals compiled on this basis contain no allowances for losses in smelting and refining and therefore, in general, exceed the quantities actually recoverable. The table refers exclusively to minerals mined in Tasmania and excludes minerals imported for smelting and refining:

Assayed Contents of Metallic Minerals Produced

Mineral	1960	1961	1962	1963	1964
COPPER (Tons)					
Copper Concentrate	10,733	11,308	12,785	14,919	13,158
Copper Ore	59	378	438	427	342
Copper Precipitate	6	8	6	6	20
Lead Concentrate	(a)	79	80	125	74
Lead-Copper Concentrate ..	597	731	961	1,090	1,018
Zinc Concentrate	198	239	245	238	267
Total	11,593	12,743	14,515	16,805	14,879
GOLD (Fine Oz.)					
Copper Concentrate	7,188	7,089	7,230	10,171	7,714
Copper Ore .. ..	..	153	223	134	122
Lead Concentrate	3,397	3,889	3,384	4,335	3,939
Lead-Copper Concentrate ..	11,006	12,572	18,021	18,820	19,271
Zinc Concentrate	2,124	2,736	2,843	2,797	3,233
Other Sources	308	446	417	165	97
Total	24,023	26,885	32,118	36,422	34,376
LEAD (Tons)					
Lead Concentrate	9,061	7,230	8,056	9,557	8,689
Lead-Copper Concentrate ..	2,204	2,733	4,228	2,934	3,832
Zinc Concentrate	1,775	2,290	2,470	2,491	2,827
Total	13,040	12,253	14,754	14,982	15,348
SILVER ('000 Fine Oz.)					
Copper Concentrate	47	60	73	60	53
Copper Ore .. ..	..	9	12	9	9
Lead Concentrate	448	357	388	461	398
Lead-Copper Concentrate ..	717	799	995	942	1,048
Zinc Concentrate	186	227	232	231	272
Total	1,398	1,452	1,700	1,703	1,780
SULPHUR (Tons)					
Lead Concentrate	2,071	2,531	2,817	3,360	3,053
Lead-Copper Concentrate ..	952	2,135	2,926	2,624	2,649
Pyrite Concentrate	33,375	25,053	4,131	9,537	22,437
Zinc Concentrate	18,359	22,570	26,684	26,797	27,965
Total	54,757	52,289	36,558	42,318	56,104
ZINC (Tons)					
Lead Concentrate	1,784	1,924	2,113	2,537	2,338
Lead-Copper Concentrate ..	1,106	1,178	1,423	1,081	1,221
Zinc Concentrate	31,625	36,990	44,382	44,871	46,596
Total	34,515	40,092	47,918	48,489	50,155

Assayed Contents of Metallic Minerals Produced—*continued*

Mineral	1960	1961	1962	1963	1964
TIN (Tons)					
Tin Concentrate	884	879	1,058	1,005	990
TUNGSTIC OXIDE (WO ₃) (Tons)					
Scheelite Concentrate	291	709	686	675	717
Wolfram Concentrate	806	810	349	285	276
Total	1,097	1,519	1,035	960	993
CADMIUM (Tons)					
Zinc Concentrate	56	62	72	74	77
COBALT (Tons)					
Zinc Concentrate	(a)	(a)	1	2	1
MANGANESE (Tons)					
Zinc Concentrate	172	185	264	258	243

(a) Under half a ton.

Fuel Minerals (Coal)

The only fuel mineral mined in Tasmania is coal and details of production are shown for a five-year period:

Production of Coal in Tasmania
(⁰⁰⁰ Tons)

Description	1960	1961	1962	1963	1964
Coal, Black—					
Semi-anthracite	2	2	2	2	2
Bituminous	296	254	270	205	149
Total	298	256	272	207	151

As indicated in the historical section of this chapter, imported fuel oils are tending to replace coal in a number of applications, chiefly industrial, and the decline in production of coal is due to the resulting fall in demand.

Non-Metallic (Excluding Fuel) Minerals

The quarrying of limestone is the earliest recorded activity in the field of non-metallic mineral mining in the State, burnt lime being sought as a base for building mortar. (The extensive shell deposits on the shores of Pitt Water near Sorell were another lime source used by the colonists in the making of mortar.) Production has gradually increased, there being a steady demand for limestone in the making of cement, in various chemical and metallurgical

processes and in the manufacture of calcium carbide; limestone also is used as a source of agricultural lime. Large exports of limestone were made in the period 1918-1947, when B.H.P. Co. Ltd. operated quarries at Melrose on the north-west coast, for material to use as a flux in metallurgical processes carried out at their Newcastle iron and steel plant.

The next table shows the Tasmanian production of non-metallic minerals for a five-year period:

**Non-Metallic (Excluding Fuel) Minerals Production
(Tons)**

Mineral	1960	1961	1962	1963	1964
Clays—					
Brick and Shale	157,244	153,156	140,536	146,885	170,496
Kaolin	964	1,232	606	1,875	2,400
Other	16,814	20,628	29,966	24,229	31,488
Dolomite	2,678	1,108	2,217	2,623	923
Limestone (a)	215,208	203,342	318,538	354,465	351,518
Ochre	31	75	60	51	69
Pebbles	515	453	375	518	727
Silica	5,231	1,415	514	2,641	13,606

(a) Excludes quantities used directly as a building or road material.

Construction Materials

In addition to the types of mining and quarrying previously described, there is the quarrying of construction materials (for buildings, roads, &c.) such as crushed and broken stone, gravel, sand, &c. This type of activity also is taken into account when placing a value on the output from mines and quarries, measuring their level of employment, &c.

Mining Industry Statistics

In the earlier sections of this chapter, the data on mining and quarrying have been confined to physical production and metallic content by assay, but other measures such as the level of employment, values of output, &c. are also available. A definition of the field of activity classified as "mining and quarrying" appears as an introduction to the "Mining" section of this chapter.

The following table gives details of employment in mines and quarries for a five-year period:

Employment in Mines and Quarries (a)

Particulars	1960	1961	1962	1963	1964
Number of Mines and Quarries	58	56	61	63	42
Number Employed (b)—					
Working Proprietors ..	22	14	22	23	16
Salaried Employees—					
Above ground ..	273	286	282	330	288
Below ground ..	43	46	48	36	75
Wage Earners—					
Above ground ..	1,662	1,652	1,539	1,586	1,449
Below ground ..	879	818	768	667	683
Total	2,879	2,816	2,659	2,642	2,511

(a) Mines and quarries employing four or more persons.

(b) On last full working day of year shown.

Values of Output and Production

Value of Output is the selling value at the mine or quarry (i.e. exclusive of transport costs from mine or quarry to the point of sale). Value added by reduction of ores, concentrates, &c. to metals is excluded.

Value of Production is the selling value at the mine or quarry *less* the cost of power, fuel and light and the cost of certain materials and stores such as timber, explosives, &c. No allowance is made for depreciation or costs of maintenance.

The next table gives details of value of output, value of production and costs data for mines and quarries employing four or more persons:

Mines and Quarries (a)—Value of Output; Value of Production; Costs (\$'000)

Particulars	1960	1961	1962	1963	1964
Value of Output	15,780	15,504	17,374	19,763	24,109
Less Cost of Power, Fuel and Light used	602	748	760	789	786
Less Other Costs (mainly materials)	4,536	4,716	4,758	4,984	5,965
Value of Production (b) ..	10,642	10,040	11,856	13,990	17,358
Salaries and Wages Paid (c)—					
Salaries	950	1,056	964	981	1,264
Wages (d)	6,224	6,248	6,216	6,515	6,819
Total Salaries and Wages..	7,174	7,304	7,180	7,496	8,083

(a) Mines and quarries employing four or more persons.

(b) The cost of labour is *not* deducted in determining the value of production.

(c) Exclusive of drawings by working proprietors.

(d) Net amount after deducting value of explosives sold to own employees.

The previous tables on employment, output, &c. have been restricted to data obtained from mines and quarries employing four or more hands, this size level providing a basis for uniform mining statistics in all Australian States. However, the annual mining census in Tasmania seeks information from all engaged in mining and quarrying and includes operations with less than four persons employed. The following table shows the value of output for all mining and quarrying operations and also the contribution of specific types of activity:

All Mines and Quarries (a)—Value of Output (\$'000)

Particulars	1960	1961	1962	1963	1964
Metal Mining	12,976	13,018	14,450	16,915	21,600
Fuel Mining	1,374	1,168	1,232	842	649
Non-metal (excluding Fuel) Mining (b)	680	532	714	788	864
Total Mining	15,030	14,718	16,396	18,545	23,113
Construction Material Quarrying	1,104	1,200	1,410	1,757	1,935
Total Mining & Quarrying	16,134	15,918	17,806	20,302	25,048

(a) Includes output of mines and quarries employing less than four persons.

(b) Includes clays, dolomite, silica, limestone, &c.

Smelting and Refining of Metals

The value of output of mining and quarrying is defined as the selling value of the product at the mine or quarry, (e.g. in metal mining, usually the selling value of specific concentrates at the mine). Earlier, reference was made to the fact that Tasmanian manufacturing industry includes the extraction and refining of metals, not only from locally produced ores and concentrates, but also from those that have been imported; in actual fact, extraction and refining in Tasmania employ more persons than mining and result in greater values, both of output and of production. The following table is compiled from factory statistics to illustrate this point:

**Non-Mining Activity—Extracting and Refining Metals
Factory Class IV, Sub-Class 5—Values of Output, Production, &c.**

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
Factories (No.)	3	3	3	4	4
Average Workers (a) .. (No.)	3,070	3,160	3,283	3,413	3,444
Value of Output (\$'000)	46,652	46,181	48,472	59,020	66,238
Value of Production (b) (\$'000)	18,408	18,433	18,079	23,699	24,065

(a) Average whole year, including working proprietors.

(b) Value of output less recorded costs of manufacture, other than labour.

In the previous table, the principal metals included are: copper (from local ores), zinc and cadmium (from local and imported ores), aluminium (from imported bauxite) and ferro-manganese alloy (from imported ores).

The value of production in the factory table does not duplicate values already recorded in the mining sector since the cost of the basic raw materials—ores or concentrates—is one of the recorded costs of manufacture deducted from the value of output.

The next table gives details of the production of zinc and copper by refinery processes:

**Non-Mining Activity—Production of Zinc and Copper
(Tons)**

Year	Refined Zinc	Cathode Copper	Year	Refined Zinc	Cathode Copper
1959-60 ..	117,893	11,262	1962-63 ..	136,205	11,694
1960-61 ..	125,936	9,600	1963-64 ..	138,610	11,790
1961-62 ..	129,069	11,812	1964-65 ..	138,779	12,125

Aluminium Production

The refinery for the production of alumina and refined aluminium is situated at Bell Bay on the River Tamar. The choice of Tasmania was determined by the availability of large supplies of relatively cheap hydro-electric power. Production of alumina commenced in February, 1955, and of refined aluminium

in September, 1955. Although production data are confidential, published statements indicate that the capacity of the plant, in terms of primary aluminium, was lifted to 35,000 tons in 1962 and to 52,000 tons in 1963. When the Bell Bay plant began operating, it was the sole Australian producer of aluminium but another plant has now been established at Geelong in Victoria.

FISHERIES

Description of Main Fish Varieties

This section is devoted to a discussion of the important species in the Tasmanian sea fishery. These species are not all scale fish but include elasmobranchs (sharks), molluscs (scallops, oysters, abalone), and crustaceans (crayfish). The Tasmanian fishery involves about 1,000 licensed fishermen in 500 vessels, and harvests approximately eight million pounds weight of fish annually. The catch is composed of about 40 types of which five—crayfish, shark, barracouta, scallop and salmon—are of major importance (over 90 per cent of the catch). One, the tuna, may have great potential for the future and nine other types are caught in significant quantities.

Each of the sixteen types discussed is in the order set out by the Statistics Sub-Committee of the Commonwealth/State Fisheries Conference, and each species is numbered according to the code prepared by the Fisheries Division of the Department of Primary Industry on behalf of the Conference.

The descriptions of the types of fish include their common name and scientific name, a brief description of each fish, criteria for distinguishing different species (if more than one species are caught under the same general name), notes concerning their distribution and habit, and the methods of fishing employed.

Terms Used

The following is a non-technical explanation of some of the terms used: *anal*, near the anus; *anterior*, towards the head; *caudal*, tail; *dorsal*, back; *operculum*, gill cover; *pectoral*, side of body near gills; *ventral*, pelvic.

Authorities for Reference

The descriptions of genera and species are very brief and in many cases will be insufficient for detailed scientific work, but should be effective as a general guide. Further information on identification of species may be obtained from:

Fish and Fisheries of Australia — T. C. Roughley.

Handbook of Australian Fishes — I. S. R. Munro.
(published in Fisheries Newsletter)

Vertebrate Animals of Tasmania — C. E. Lord and H. H. Scott.

Whitebait (*Lovettia sealii*-076)

Whitebait are well known as a canned fish and consist of the young of a number of species of fish. The most common constituent of Tasmanian whitebait is a species called *Lovettia sealii*. They are very small fish (about one inch long), practically transparent with conspicuous black eyes, and move from the sea to fresh water to spawn in spring or early summer. They travel in

long but narrow concentrations or in dense shoals, and are captured by scoop nets of fine mesh.

Commercial fishing began during 1941 and 1942 and reached a peak in 1947 when over a million pounds were caught. The catch has now declined to somewhere in the region of 20,000 pounds.

Flounder and Sole (*Lophonectes gallus*, *Paraplagusia unicolour*,
Pseudorhombus tenuirastrum; all species-151)

The flat fishes are almost wholly marketed as flounder, although three distinct species make up the local catch. These are the Crested Flounder (*Lophonectes gallus*), the Deepwater Flounder (*Pseudorhombus tenuirastrum*) and the Lemon-tongued Sole (*Paraplagusia unicolour*).

There is much misunderstanding of the use of the terms "flounder" and "sole"; generally speaking, the flounder group has the caudal fin separate from the dorsal and anal fins, whereas the sole has the caudal fin reduced in size and completely fused with the dorsal and anal fins.

The crested flounder is very small, never attaining more than seven and a half inches. It is a very common fish in the catch of trawlers, and is easily recognised by the long anterior dorsal rays extending into a crest. Although it is very common in coastal waters, it is too small for commercial exploitation. The deep water flounder occurs in estuaries and shallow coastal waters. It has small spots and ring-like markings, with two blotches on the base of its tail rays; the species is also characterised by a notch on the snout.

The lemon-tongued sole is tongue shaped, the snout curled around with the mouth in a long, hooked lobe. It attains 13 inches and occurs on sandy bottoms in up to 18 fathoms. The fish is not heavily fished commercially and is usually captured at night with lights by spearing.

Cod (*Physiculus barbatus*-201)

The family Gadidae, the true cods, is represented in Tasmania by the Southern Rock Cod (*Physiculus barbatus*). Although this group includes the most important commercial fish after the herring in the Northern Hemisphere, it is not a commercially important fish in Australia.

The southern rock cod lives in rocky situations offshore and because of this and its benthonic habits, it is almost always caught on hand-lines. The fish is readily distinguishable by the presence of a fleshy barbel on the lower jaw, which probably helps in the search for food. It may grow to a length of 17 inches. Its colour is reddish brown, with dark spots at the base of its pectoral fins.

The cod is not highly prized as a food fish, its flesh being rather soft. Its importance in Northern Hemisphere fisheries derives from its supply of Vitamin A and D in the oil from its liver, as well as its food value.

Tuna and Mackerel (*Thunnus thynnus maccoyii*-301; *Thunnus alalunga*
germo-303; *Katsuwonus pelamis*-315; *Auxis thazard*)

Although tuna is caught at present in Tasmanian waters in only small quantities, it is reported to be present in large numbers in coastal waters. It is an excellent canning fish and the basis of important industries in N.S.W. and overseas.

There are four major species of tuna found in Tasmanian waters. They are:

- (i) Southern Blue Fin Tuna (*Thunnus thynnus maccoyii*)—a large chunky fish tapering sharply towards the tail. Dark blue above and silver below, with yellow tinges on the second dorsal fin and tail. This tuna may reach nine to 10 feet in length and 1,500 pounds and quite commonly ranges from 500-800 pounds in Australian waters. However, the average commercial fish is about 50 pounds. Open coastal waters are its habitat.
- (ii) Albacore (*Thunnus alalunga germon*)—a chunky robust fish tapering sharply to the tail. Pectoral fin very long (behind the anal fin). Colour, dark green-blue above, silver below, dorsal finlets yellowish, others grey. Size—up to three and a half feet and 60 pounds but averaging five to nine pounds. Oceanic waters are its habitat.
- (iii) Striped Tuna or Skipjack (*Katsuwonus pelamis*)—plump, robust, tapering sharply to the tail behind the second dorsal and anal fins. Colour—black above with metallic purple and green sheen and silvery white, characterised by five dark-grey longitudinal stripes along the sides below the lateral line. Size—may grow to 25 inches and weigh 12 pounds, but normally five to 10 pounds. Deep coastal and oceanic waters are its habitat.
- (iv) Frigate Mackerel or Leadenall (*Auxis thazard*)—elongated and slightly compressed body. Colour—lead-grey colour above and silver below; the back has a pattern of oblique broken wavy lines and blotches. The frigate mackerel is the smallest of the tuna group of fishes and seldom grows larger than three pounds.

The tuna group is excellent canning fish and makes up a large proportion of fish caught overseas. Although tuna have been known to exist in Australian waters for many years, and studies and tests as long ago as 1936 showed that the fish occurs in large quantities, it was not until the 1950's that it was caught in commercial quantities. Since then, quite a large industry has been developed by N.S.W. and S.A. boats, the N.S.W. boats sometimes fishing in Tasmanian waters. In Tasmania itself, the tuna has been left to the anglers who find very good sport off the east coast.

A tuna fishery for Tasmania may be possible in the immediate future but its development has been slow due to the large capital investment involved. The method of fishing in Australia is usually by polling or trolling, using artificial lures when they are effective, or live bait of pilchards, &c. The whole of the catch is usually canned.

Barracouta (*Leionura atun*-335)

The barracouta (sometimes referred to as 'couta) and King Barracouta (*Rexea solandri*) belong to a group of fishes which includes Snake Mackerels and Snoeks and should not be confused with the savage Barracuda (*Agriposphyræna barracuda*) of the West Indies.

The fish has an elongate compressed body covered with minute scales. The mouth is large with a wide cleft and powerful teeth. The dorsal fin is spinous (19 to 20 spinous rays) and sits back in a groove; the caudal fin is strongly forked. The colour is blue-black with silvery white sides and belly. The barracouta can grow to four feet six inches and 10 pounds but averages two and a half to three feet and three to five pounds.

Spawning occurs mainly in summer and early autumn along the eastern and northern coasts. The adults occur in shoals and although they may enter estuaries, they are usually found in ocean waters close to the coast and in open bays such as Storm Bay and Oyster Bay.

The fish is of major importance to the Tasmanian fishery and occurs in large numbers but is subject to pronounced seasonal fluctuations. It is a fish of good edible quality. Commercial fishermen use mainly "jigs" or trolling. (A jig is a slender rod attached to a short line or chain with a barbless hook; when the fish strikes it is jerked on to a shute, frees itself, and slides into the well.)

The king barracouta (or kingfish), until about eighty years ago, was one of the State's principal commercial fish but today is rarely seen or caught except in deep water. It can be distinguished from the ordinary barracouta by its more thick-set appearance, larger eyes and the possession of two lateral lines; it is a fish of excellent edible quality.

Mullet (*Mugil cephalus*-351; *Aldrichetta forsteri*-370).

The mullet is a very common fish in Australian waters but is not important commercially in Tasmania due to its rather variable edible qualities. Because it has often been the commonest and therefore the cheapest fish available, it has been looked down on; also, in certain areas, it becomes infected with a fungus (*Actomyces*) which gives the flesh an earthy taste and renders it quite unpalatable. In prime condition, the mullet, although rather oily, is a good table fish.

In Tasmania, there are two species of mullet; the Sea Mullet (*Mugil cephalus*) and the Yellow Eye Mullet (*Aldrichetta forsteri*). The family Mugilidae is one of the most uniform in the kingdom of fishes and there is a general similarity between the species. All have blunt heads with toothless mouths, large scales, general blue-silver colour and rarely exceed two feet in length. The only way to accurately distinguish the species is to count the spines in the anal fin and the number of scales from behind the base of the pectoral fin back to the base of the caudal fin. The sea mullet has eight anal rays and 32 to 42 lateral scales and the yellow eye mullet has 12 anal rays and 54 to 58 lateral scales.

The mullet is typically an estuarine fish which migrates upstream when about a year old, stays there for the next two years and may even enter fresh water. It then migrates in shoals and moves to the sea to spawn. It is a typical bottom-dwelling fish, feeding mainly on plant material.

Most fish are captured commercially by beach seining; anglers find the yellow eye mullet relatively easy to catch but not the sea mullet.

Trevally (*Serirolella brama*-453)

The Trevally, or more precisely, the Snotgall Trevalla, is a common school fish around the Tasmanian coast. ("Trevally" is also the name applied to a silver fish of another species.)

It has a laterally compressed body, silver in colour with darker patches. The eye is large and in the mid line of the head. The first dorsal fin is low with the middle spines being longest; the ventral fin is below the pectorals. The fish attains a length of 22 inches.

When freshly caught, the fish is of excellent quality and edible standard, its flesh white, tender and delicately flavoured. However it does not keep well and should be gutted soon after capture.

It is commonly caught by gill or mesh nets set close inshore amongst kelp; it can be caught by line.

Salmon (*Arripis trutta*-490)

The Australian salmon is not a true salmon and is completely unrelated to the salmon of the Northern Hemisphere. It probably received this name from the early colonists who confused the fish with the true salmon because of a superficial resemblance and its fighting qualities when hooked. It is commonly referred to as the native, colonial or black back salmon.

This fish belongs to the perch-like fishes, and has a spindle-shaped body, covered with moderately sized scales. The mouth has minute teeth on the jaws and roof. The dorsal fin bears nine to 11 spinous rays and the anal fin has three spines in front. The pectoral fins are small and placed directly above the ventral fins. The colour is variable but usually grey-green above with irregular black spots and blotches on the head. Young fish are olive green with a silver-white belly. In Australian waters, the fish may grow to 36 inches and 21 pounds; however, the average weight is between five and 10 pounds, and those caught in Tasmanian waters tend to be somewhat smaller.

Spawning occurs in sheltered estuaries and harbours from January to March. The fish spends the first two years of its life in these waters and migrates to offshore waters when it is eight to 10 inches long. By the age of nine years, the fish may measure 24 inches in length and weigh six to seven pounds. The salmon is found in large shoals travelling close to the coast at or near the surface of water less than 15 fathoms deep.

Although the fish is of great importance to Tasmanian fishermen, it is of variable edible quality with dark coarse flesh. Most salmon are captured commercially by beach seine nets. For the angler, it is one of the finest small-game fish in Australian waters.

Perch (*Nemadactylus macropterus*-502)

The Silver and Black Perch or Jackass-fish (*Nemadactylus macropterus*) belongs, with the Morwong, to the family Cheilodactylidae, and is readily distinguished by the great elongation of a pectoral fin ray, which is approximately twice the length of the other rays. The perch is distinguished from the morwong by a black band extending from in front of the dorsal fin to behind the gill cover. It is not a true perch, which is mainly a freshwater species.

Although the Tasmanian perch is of high quality as an edible fish, few fishermen attempt to catch them for sale due to the high cost of nets and gear.

Trumpeter (*Latridopsis forsteri*-536, *Latris lineatus*-535)

This fish is represented in Tasmania by the Bastard or Silver Trumpeter (or simply Trumpeter)—*Latridopsis forsteri*, and the Striped Trumpeter—*Latris lineatus*.

The silver trumpeter has a compressed body with length slightly more than three times its depth. Colour varies with age. It rarely exceeds two feet in length. The striped trumpeter is a handsome fish, with three prominent longitudinal olive green or brown bands along the back and a fourth one less distinct. The dorsal fins are deeply notched and are olive green splashed with pale iridescent blue. The fish grows to about four feet and 60 pounds.

Both are found near offshore reefs but the striped trumpeter is now mostly restricted to deep waters. The silver trumpeter is caught in gill nets and the striped by handlines. Although both species are excellent table fish, the striped trumpeter is more prized and is recognised as one of the best two or three table fish in Australia.

Flathead (*Neoplatycephalus fuscus*-615, *N. richardsoni*-616

N. speculator-617, *Trudis bassensis*-621, *Levipora laevis*-625)

The flathead is a very common fish in Tasmanian waters and makes up a large percentage of the catch of anglers in estuaries and bays. The fish belongs to the family Platycephalidae and has a very depressed head, much broader than deep, with extensive gill slits and a scaly skin. On each side of the head, at the corner of the operculum, are two sharp spikes which can inflict a severe cut but are not venomous. The lower jaw projects in front of the upper lips so that the mouth is directed upwards.

There are five Tasmanian species of flathead of commercial value. They are:

- (i) The Rock Flathead (*Levipora laevis*)—variable colour, no exposed ridges on the head, may grow to 15 inches in length.
- (ii) The Sand Flathead (*Trudis bassensis*)—space between eyes narrower than diameter of eye; lower spine on the operculum more than twice length of upper spine, and a rounded tail; an oceanic species but lives close to shore; grows to 25 inches and two and three-quarter pounds, but usually averages 16 to 17 inches and about one and a half pounds.
- (iii) The Dusky or Mud Flathead (*Neoplatycephalus fuscus*)—head dusky with brown spots. It spends its time almost exclusively in estuaries and may reach four feet and 28 pounds.
- (iv) The Tiger Flathead (*Neoplatycephalus richardsoni*)—jaws and palate have large canine teeth. It is a fish similar in size to the sand flathead but usually lives farther offshore and is the backbone of the commercial flathead fishery.
- (v) The King or Deep Sea Flathead (*Neoplatycephalus speculator*)—very closely related to the tiger flathead, differing only in the structure of the gills.

The flathead, in general, is an excellent edible fish with white, tender and well-flavoured flesh. The fish is a bottom-dweller but although it can be caught by trawlers, the Tasmanian industry is based on hand-lines and the fish filleted, frozen and exported to the continental States.

Shark (*Mustelus antarcticus*-651; *Galeorhinus australis*-655)

Tasmania's shark fishery is confined in the main to two fish—the School or Snapper Shark (*Galeorhinus australis*) and the Gummy Shark (*Mustelus antarcticus*). The proportion of gummy shark in the catch varies seasonally from nil per cent to 100 per cent; both fish are marketed together and the flesh sold as "flake".

The school shark has a flattened head with a pointed, translucent snout. The anterior dorsal fin is situated over the interval between the pectoral and ventral fins and is twice the size of the second dorsal fin. The upper surface is slate-grey in colour, the fins are dark-grey and the belly white. This fish is reputed to grow to six feet and 170 pounds but there is no authentic record of a fish longer than five feet eight inches.

The gummy shark has an obtuse snout. The anterior dorsal fin is situated between the dorsal and ventral fins. The caudal fin is slightly elevated and has a notch in the distal lobe. The teeth are reduced to flattened crushing plates. The upper surface is ash-grey in colour and spotted, the belly white. It may grow to a length of five to six feet.

Although sharks have been fished commercially in Australia for many years, the Tasmanian industry did not begin until the early years of World War II. It has now become established as one of the most important units of the Tasmanian fishery. The fish are caught by the "long-line" method. Each line consists of a number of "fleets", each "fleet" carrying 100 to 200 hooks. Each boat carries a number of lines which can be set individually or linked together.

Unlike the scale and bony fish and some other sharks, these two varieties bear their young alive and do not lay eggs. Mating usually takes place from May to June with the young "pups" born about December. The average litter is 28 pups and therefore the reproductive potential (the rate at which the population is maintained), is low, compared with that of other fish. It follows that there is a danger of over-fishing if the fish is heavily exploited.

Garfish (*Hemiramphus Australis*-710; *Hemiramphus melanochir*-712).

The Australian garfish belong to the family Hemiramphidae, fish of this family being called "half-beaks" in the U.S.A.

The garfish may reach a length of 18 inches, but usually average about 12 inches. The fish is very slender with the lower jaw extended into a slender spine one to two inches long. Its scales are very deciduous and fall off at the slightest handling. As an edible fish, the flesh is white and tender, but the bones are small and very numerous.

The sea garfish are oceanic species but often enter estuaries and are seldom found more than a mile or two offshore. Because it swims either on or very near the surface, it is captured with seine nets. Fishing is concentrated from March to April, with most fish being caught in seine nets from sheltered ocean beaches. Occasionally a seine net is used from a boat over deeper water, the fish being frightened into the meshes of the net, as it is drawn towards the boat, by splashing the water with a paddle.

Crayfish (*Jasus lalandei*-780)

The crayfish is by far the most important unit in the Tasmanian fishery, not only in terms of pounds of fish landed, but also in monetary return. It is, of course, not a true fish or even a vertebrate (back-boned) animal. It belongs to the phylum Arthropoda (which includes insects, spiders, ticks and scorpions) and to the class Crustacea of this phylum, along with the crabs. It is more correctly referred to as a Spiny Lobster (*Jasus lalandei*).

As with crabs, the conspicuous hard outer covering is present but the pincer-like appendages are much less pronounced. The Tasmanian species is distinguished by antennules with two short flagella and the stridulating organ at the base of the antennae is absent. The rostrum is small and mostly points upward and the carapace is covered with forward-pointing spines. The abdominal tergites are sculptured.

The crayfish are caught in traps which are hemispherical, mainly made of cane and called pots. The pots are baited with fish or flesh and "shot" from dinghies or directly from the boat. The boats range from 20 feet to 70 feet

long, most having diesel engines and auxiliary sails. They operate all round the Tasmanian coast, including the Bass Strait Islands, as seasons permit, and the pots are set in from one to 50 fathoms of water.

The crayfish is boiled and either sold locally or exported to New South Wales and Victoria, or overseas to the United States. The whole fish is usually sold in Australia but only the tails, which contain most of the edible meat, are sent to the U.S.A.

Oyster (*Ostrea angasi*-831; *Crassostrea gigas*-828)

There are two types of oyster found in Tasmania—the Mud Oyster, *Ostrea angasi*, which is a native of the State, and the Japanese (or Pacific Oyster), *Crassostrea gigas*, which was first introduced into the State in 1947.

The mud oyster lives free in the adult stage but may be attached to rocks when young. The shell is large, rounded and regular in outline and the space between the valves is shallow. The upper valve is almost flat except for a slight dome near the hinge. The lower valve is dense and becomes massive with age. The lower valve is greyish-white externally but the upper valve may become brown or purple away from the hinge. The mud oyster is not common but small quantities are collected from estuaries and some marine beds are known. Although relatively few oysters are marketed now, it is evident from piles of shells (middens) that they were an important part of the diet of the aborigines.

The Japanese oyster is an attached species, markedly inequivalve and very variable in shape. The lower valve is deep and cup-shaped and rather strongly folded externally. The upper valve is rarely flat but usually slightly domed or humped. The external colour is variably white or creamy yellow with purple or reddish streaks. Internally, the shells are faintly opalescent white with a dull purple or brown border.

This oyster was first imported in 1947 to stock beds in Pittwater (near Hobart). Later stocks were imported in 1951 and 1952 and again set out in Pittwater. However, when breeding appeared to be restricted by the cold water, the stocks were transferred to Port Sorell in the north of the State and to Victoria. Although the Pacific oyster is now part of the local marine fauna, and research seems to have shown that it could be cultivated in the north of the State, no commercial fishery has been established.

Scallop (*Pecten meridionalis*-835; *Equichlamys bifrons*-836; *Mimachlamys asperimus*-837)

The Tasmanian scallop industry is based on the Commercial Scallop, *Pecten meridionalis*. There are two other species found, the Queen Scallop, *Equichlamys bifrons*, and the Doughboy Scallop, *Mimachlamys asperimus*, but neither is important commercially although the doughboy has been of value in the past.

The queen scallop has a large, finely-ribbed shell and is relatively rare. The doughboy has a moderately-sized shell up to four to five inches across with equally curved valves. The commercial scallop shell may reach five to six inches in diameter but only one valve is curved, the other being flat. Scallops rest unattached on the sea floor in practically all depths of water to 500 feet. The scallop lies on the curved valve and may swim short distances by producing a jet of water, generated by clapping the valves together. Spawning probably

takes place in winter but may be extended over a long period and may even take place more than once a year. The larvae settle and the adult reaches a commercial size in four to six years.

The fishery has shown three major periods of development:

- 1904-1918** An initial period in which fishing (by dredging) was confined to the Derwent estuary.
- 1918-1960** A period of varying but generally heavy commercial exploitation of beds in the D'Entrecasteaux Channel. This was the time when the fishery developed into an important primary industry.
- 1960-1965** The development of the oceanic beds on the east and north-east coasts in deeper water and the decline of the D'Entrecasteaux Channel beds.

Scallops are collected by dredges towed behind fishing boats and hauled to the surface on wire lines by mechanical winches. Fishing regulations limit each boat to two dredges which may be pulled simultaneously. On reaching the surface, the dredge is emptied and its contents sorted (minimum legal limit is three and a half inches shell diameter). The "size" scallops are boxed or bagged and the rest returned to the sea. From 1928 to 1963, the fishing season was restricted to three or four months as a further conservation measure. However, there seems to be some evidence to suggest that the rigid enforcement of the legal size limit is sufficient.

The sorted shells are taken to the "splitting" sheds where they are opened and the white adductor muscle and roe removed from the shell. The bulk of the catch is marketed locally.

Former Tasmanian Fisheries

The previous section deals with the species of fish, crustaceans and molluscs which are now taken in Tasmanian waters. The following marine life once had some importance in the State's economy:

Whales

Early in Tasmania's development, whaling was a principal activity, the main grounds being the bays off the mouth of the Derwent estuary and even within the Derwent itself. In the beginning, the whaler needed no ship but simply a longboat, a crew of oarsmen and a strategically placed shore observer to signal that a whale was in sight; under these circumstances, bay whaling crews might follow a variety of occupations and only take to the water when a warning was given.

Exports of whale oil were reported in official statistics as early as 1822 but 1837 appears to have been the year of best return, the "value of whale fisheries" being recorded as \$270,420 (£135,210) with a deployment of 18 ships and 75 boats. The industry was completely uncontrolled and gradually the number of whales close to shore decreased. Ships engaged in whaling reached a maximum number and tonnage in 1850 (40 ships, 9,724 tons) and another forty years were to elapse before the industry ceased.

King Barracouta (Rexea solandri)

Barracouta (*Leionura atun*) is a familiar fish to most Tasmanians, but in the 19th century, a much larger barracouta, known as the King-fish, was caught in large numbers and averaged from 12 to 14 pounds in weight. Although odd specimens of *Rexea solandri* occasionally are found today, the species is extinct in Tasmanian waters for commercial purposes.

Shrimp

The Tamar estuary in the 19th century was the site of a commercial shrimp fishery; this product was still being marketed in the early years of the 20th century. The shrimp was described as being too small to peel, and was eaten, shell and all.

Oysters

Writing in 1891, the Government Statistician, R. M. Johnston, had this to say: "Of Molluscs there is only one of any importance, viz., the Common Mud Oyster. Although not now abundant—the beds now worked yielding about 100,000 oysters per year—it is estimated by competent authorities that, about 20 years ago, the various beds now unprofitable yielded about 44,000 bags, or 22,000,000 oysters per year. The destruction of these prolific Oyster beds has engaged much attention. Although attributed generally to reckless unrestricted dredging continued until the greater number of the beds were wholly destroyed, it is believed by some that natural causes were operating currently with the causes alleged".

FISHERIES STATISTICS

Source of Data and Method of Presentation

Statistics presented in this section have been supplied, in the main, by the Fisheries Division of the State Department of Agriculture. In the preparation of fisheries production statistics, the quantities are generally in terms of the form in which the catch is taken from the water. For example, the statistics of fish production are in terms of "estimated live weight" which is calculated from landed weights by using conversion factors for the various species. These conversion factors allow for the fact that the quantities of fish reported are frequently in a gutted, headed and gutted, or otherwise reduced condition. Crustaceans are reported on a "whole weight" basis and molluscs (edible) on a "gross (in-shell) weight" basis.

The catch is generally defined as that taken in Tasmanian waters; however, a quantity of sharks and crayfish taken by Victoria-based fishermen in Tasmanian waters, but marketed in Victoria, is included in the Victorian catch and excluded from Tasmanian figures, the logic being that the catch influences the Victorian economy.

Details of production refer only to recorded commercial production. In view of the importance of amateur fishermen in certain types of fishing, details shown cannot be taken as representing the whole catch. In addition, it is likely that the figures shown understate, to some extent, the full commercial catch since no information is available on fish taken for sale by persons not licensed as professional fishermen.

Persons Engaged in Fisheries

In the following table, which gives details collected in the Population Census at 30th June, 1961, the numbers of persons whose industry was classified to "fishing and whaling" are shown together with the numbers engaged in all primary industries and in the total work force; Australian and Tasmanian figures are compared:

**Australia and Tasmania—Persons Engaged in Fisheries
Population Census, 30th June, 1961**

Particulars	Australia	Tasmania
Persons Engaged in—		
Fishing and whaling (No.)	8,252	575
All primary industries (No.)	513,286	20,788
Total work force (No.)	4,225,096	130,917
Persons engaged in fishing and whaling as a proportion of—		
All primary industries .. (Per Cent)	1.6	2.8
Total work force .. (Per Cent)	0.2	0.4

Employment, Boats and Equipment

The boats used for the estuarine fisheries are mostly small vessels, propelled by diesel or petrol motors of low power. The offshore vessels range in length from 30 feet to 100 feet and almost invariably are powered by diesel engines. Refrigeration of the catch at sea is becoming more common, the four main types being ice box, ice cooling, brine tanks and dry refrigeration; many boats still have wells which serve to keep the catch alive, e.g. crayfish.

Equipment

In the Tasmanian fisheries, a wide range of equipment is used. The following table sets out the main types of fish, crustaceans and molluscs and the equipment most commonly used:

Fish Equipment Used in Tasmania

Type of Fish	Equipment Used	Type of Fish	Equipment Used
Silver Trumpeter ..	Gill net	Barracouta	Jig and Troll
Shark (edible)	Long-lines	Crayfish	Pots
Australian Salmon ..	Beach seine	Scallops	Dredge

The type of equipment used is determined, in some degree, by the nature of the narrow continental shelf surrounding Tasmania. The two nets most widely used are the gill net and the beach seine; a set net of the gill type can be worked in almost any location, irrespective of whether the bottom is rocky or not, while the beach seine is operated only over favourable bottoms. The lack of extensive banks and shoal systems, coupled with the narrowness of the continental shelf, explains why the fish population is not large and why European-type trawling has not been developed. The principal school fish is the Australian salmon and aircraft spotting has resulted in greatly increased catches which are taken close inshore by use of beach seines.

A feature of the Tasmanian fisheries is the use of dual, triple or even quadruple types of equipment from a single boat on the one voyage. Examples of possible combinations are as follows:

Dual—beach seine net and crayfish pot; crayfish pot and long line; jig and long line, &c.

Triple—crayfish pot, gill net and long line; crayfish pot, hand line and jig, &c.

Quadruple—beach seine net, crayfish pot, gill net and long line; crayfish pot, dredge, gill net and long line, &c.

Persons Engaged, Boats and Equipment

The following table shows details of persons, boats and equipment employed in the taking of fish, crustaceans and edible molluscs. The data are derived from the licensing records of the State Fisheries Division. The term "persons engaged" refers to the number of licence holders, and lacks the precision of the concept "average number employed" used in statistics of other production sectors. Many of the licensed operators are part-time fishermen and may normally follow other occupations:

Fisheries—Boats and Equipment in Use, Persons Engaged, &c.

Particulars	Unit	1960-61	1961-62	1962-63	1963-64
Boats Engaged—					
Under 25 ft.—with motor ..	No.	126	117	129	120
without motor ..	No.	6	25	13	12
25 ft. and under 35 ft. ..	No.	124	145	134	138
35 ft. and under 55 ft. ..	No.	190	193	199	202
55 ft. and over ..	No.	31	34	36	35
Total	No.	477	514	511	507
Value of Boats and Equipment ..	\$'000	2,120	2,248	2,254	2,158
Persons Engaged (a)	No.	1,070	1,122	1,208	1,191

(a) Total number of persons licensed; deck hands as well as masters are subject to licensing. Includes part-time fishermen.

Production*Fish Catch*

The following table shows the production of the main types of fish caught in Tasmania for a four-year period. The fish types appear in the table without any further description to identify the particular species but a specification of the commoner types appears as an introduction to this section.

Fish—Production by Type
(*000 lb. Estimated Live Weight) (a)

Type	1960-61	1961-62	1962-63	1963-64
Mullet	12	7	12	18
Tuna	9	5	24	29
Shark	969	994	832	816
Australian Salmon	1,200	2,921	1,165	850
Flathead	74	34	45	43
Barracouta	824	2,061	1,130	1,409
Whitebait	62	22	12	21
Cod	31	30	18	9
Flounder	7	8	9	11
Trevally	25	45	35	55
Trumpeter	70	38	28	21
Garfish	56	77	138	129
Other	22	17	21	18
Total	3,361	6,259	3,469	3,429

(a) Estimated live weights are calculated from landed weights by conversion factors since quantities of fish are reported frequently in a gutted, headed and gutted, or otherwise reduced condition, (e.g. barracouta and shark).

Crustaceans and Molluscs

In terms of value, the most important item in the Tasmanian catch is crayfish and the next table shows details of production of this crustacean and also of molluscs:

Crustaceans and Molluscs—Production by Type

Type	1960-61	1961-62	1962-63	1963-64
CRUSTACEANS ('000 lb. Whole Weight)				
Crayfish	3,167	3,426	3,310	3,572
MOLLUSCS ('000 lb. In-shell Weight)				
Oysters	5	1	1	2
Scallops	5,296	4,772	5,871	4,260
Abalone .. .. .	..	..	..	72
Total	5,301	4,773	5,872	4,334

Comparison with Other States

In 1963-64, Tasmania ranked third as a producer of crayfish, the two leading States being W.A. with 65 per cent of the Australian total and S.A. with 16 per cent; the Tasmanian catch was 13 per cent of the total and excluded a further 1.3 per cent taken in Tasmanian waters by Victoria-based fishermen.

For many years, Tasmania was the only State of the Commonwealth with a commercial scallop fishery; in 1955-56 Tasmania was joined by Queensland, but continued to retain its dominant position in the industry. In 1963, however, Tasmanian fishermen investigated beds known to exist in Port Phillip Bay and started a Victorian fishery, which in its first year, 1963-64, produced more than twice the Tasmanian fishery.

Catch Landed at Fishing Ports

In most types of fishing, there is a strong seasonal influence and the next table, showing the proportion of the total crayfish catch landed each month, indicates that the period of peak production begins in November.

**Proportion of Crayfish Landed In Each Month
(Per Cent)**

Month	1963	1964	Month	1963	1964
January	14.0	9.1	July	6.7	5.1
February	12.1	18.5	August	3.7	4.5
March	10.5	11.3	September (a) ..	1.5	0.5
April	4.0	8.0	October (a) ..	0.8	0.9
May	3.4	1.7	November	21.9	21.3
June.. ..	4.6	3.6	December	16.8	15.5

(a) Closed season in most waters during these months.

The table that follows shows the proportion of fish and crayfish landed at Tasmanian fishing ports during 1963-64. The ports have been grouped according to location but the information relates to port of landing only, and not to the area in which the catch was made.

**Proportion of Total Fish and Crayfish Landed at Each Port, 1963-64
(Per Cent)**

Port	Fish	Crayfish	Port	Fish	Crayfish
Derwent and Channel			Bass Strait & Islands		
Dover	6.9	15.3	Bridport	12.6	4.5
Gordon	0.2	0.1	Currie	0.1	5.0
Hobart	10.6	7.4	Lady Barron .. ..	..	10.2
Kettering	6.8	2.7	Port Sorell	9.9	0.5
Margate	4.3	2.3	Smithton	0.5	1.0
Woodbridge	1.0	0.4	Stanley	13.7	11.7
			"Tamar" (a)	0.5	0.5
			Wynyard	4.9	0.1
Total	29.8	28.2	Total	42.2	33.5
East Coast & Peninsula—			West Coast—		
Bicheno	6.0	4.2			
Coles Bay	0.9	0.2	Strahan	0.3	7.1
St. Helens	4.6	11.5			
Swansea	0.1	..			
Triabunna	6.9	8.1			
Dunalley	3.5	5.2			
Port Arthur	5.7	2.0			
Total	27.7	31.2	Total Tasmania	100.0	100.0

(a) Launceston, Beauty Point and other Tamar ports.

Value of Production—Fishing

The table that follows gives details of gross and local values of edible fisheries products. The following definitions apply:

Gross Value of Production is the value placed on recorded production at the wholesale price realised at the principal markets.

Local Value (i.e. gross production valued at the place of production), is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission, and other charges incidental thereto.

**Fisheries—Gross and Local Value of Production
(\$'000)**

Particulars	1960-61	1961-62	1962-63	1963-64
Gross Value of Production—				
Fish	296	510	324	312
Crustaceans (Crayfish)	1,246	1,422	1,474	1,580
Molluscs (chiefly Scallops)	378	362	456	311
Total	1,920	2,294	2,254	2,203
Less Marketing Costs	294	476	484	477
Local Value of Production	1,626	1,818	1,770	1,726

In other production sectors, local value is further reduced by deducting the value of materials used to arrive at the net value of production. For the fishing sector, this is not possible since data on materials used in the course of production are not available. (Petrol and diesel fuel are examples of such materials.)

Marketing

In general terms, it can be said that production of fish, crustaceans and molluscs from the Tasmanian fisheries far exceeds the demand generated by the State's relatively small population; it follows, therefore, that the industry is dependent, in large measure, on its ability to find export markets, both interstate and overseas, and this raises the problem of preserving a perishable product. In the past, shark and barracouta, when caught in large quantities, had actually been sold to orchardists as manure simply because there was no other way of disposing of the glut. Cold storage facilities are now generally available and in addition, canneries offer an alternative method of preservation, the principal cannery being located at Margate in the south. The problem of preservation has three aspects: (i) at sea; (ii) on shore; (iii) in transit to market. A survey made during 1964 indicated that approximately 14 per cent of the licensed fishing fleet had refrigerating plant of various types; in addition, some catches, e.g. crayfish, can be kept alive in boats' wells. Cold storage facilities ashore serve to hold the catch before its despatch to interstate and overseas markets while actual exports are carried by air, by refrigerated trailer on the roll-on roll-off ferries and in the refrigeration chambers of conventional ships.

The following table shows the value of exports and imports of fishery products. The fact that Tasmania has an exportable surplus, yet nevertheless imports some fishery products, is chiefly due to differences in type; the imported varieties include canned sardines, anchovies, oysters, crabs, &c., together with frozen, salted or smoked varieties of European, New Zealand or South African origin.

Fishery Products—Value of Exports and Imports
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64
EXPORTS				
Fish (a)—Oversea	(b)	..	14	7
Interstate	612	572	538	363
Crayfish—Oversea	266	492	336	326
Interstate	650	596	778	684
Scallops—Oversea .. .. .	..	..	..	63
Interstate	146	132	148	45
All Types—Oversea	266	492	350	396
Interstate	1,408	1,300	1,464	1,092
Total	1,674	1,792	1,814	1,488

Fishery Products—Value of Exports and Imports—*continued*
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64
IMPORTS				
Fish—				
Fresh and Frozen—Oversea	66	66	98	145
Interstate	44	42	54	60
Preserved in Tins—Oversea	94	74	88	89
Interstate	54	118	138	164
Other (c) —Oversea	26	20	22	25
Interstate	(b)	2	6	11
All Types—Oversea	186	160	208	259
Interstate	98	162	198	235
Total	284	322	406	494

(a) Includes fresh and frozen fish and fish preserved in tins.

(b) Under \$500.

(c) Includes smoked and salted fish and potted fish, extracts and caviare.

Fisheries Division

(Department of Agriculture)

Under the *Fisheries Act* 1959, provision is made for a Sea Fisheries Advisory Board to advise the Minister on questions relating to the management, control, protection, regulation and development of fisheries except in respect of salmon.

The Board consists of nine members appointed by the Governor as follows: the Director of Agriculture (or his representative); the Commissioner of Police (or his representative); a representative of Societies interested in the science of Zoology; two representatives of processors; and four representatives of professional fishermen. The Division of Fisheries is administered by a Secretary who is responsible to the Director of Agriculture.

The activities of the Division are as follows:

Law Enforcement

The *Fisheries Act* provides for regulations governing the taking of fish of particular species, oysters, scallops and seals in State territorial waters generally. Particular attention has lately been focussed on the taking of under-sized and illegal crayfish and regulating of areas for the taking of scallops.

Extension and Management

Considerable advice and assistance is given to professional fishermen on all matters affecting sea fishing. The provision of facilities such as cool stores, slipways and finance is a continuing function under this heading.

Research

A joint Commonwealth/State tuna survey was commenced in February 1965, and investigations are continuing.

A research programme into the scallop fishery was begun in November, 1964. Matters receiving particular consideration are the apparent irregularity of recruitment to scallop population, and the effect on the scallop of the temperature and the salinity of the sea at given depths.

A preliminary investigation into the abalone fishery has provided information for the framing of regulations to protect the stock of this relatively new Tasmanian industry.

State officers are actively co-operating with the C.S.I.R.O. Division of Fisheries and Oceanography in its investigation of the crayfish fishery.

VALUE OF PRODUCTION

PRIMARY AND SECONDARY INDUSTRIES

Introduction

The value of production for Tasmania and the other Australian States is computed in accordance with the decisions reached at the Conferences of Australian Statisticians, and principally at the Conference held in 1935. The values shown in the tables that follow refer only to the production of primary industries and factories and exclude the building and construction industry, those industrial establishments not classified as factories, and certain agricultural and farmyard operations on areas of less than one acre.

Primary Industries

The following primary industries are those for which data are separately compiled in the value of production tables:

Primary, Rural

Agriculture
Pastoral
Dairying
Poultry
Bee-farming

Primary, Non-Rural

Trapping
Forestry
Fishing
Mining and Quarrying

In respect of these primary industries, the following uniform definitions are employed:

- (i) *Gross Value of Production* is the value placed on recorded production at the wholesale prices realised at the principal markets. In cases where primary products are consumed at the place of production, or where they become raw material for a secondary industry, these points of consumption are presumed to be the principal markets. Subsidies and bounties paid by the State and Commonwealth Governments to primary industries are, in general, included in gross value of production.
- (ii) *Local Value* (i.e. gross production valued at the place of production) is ascertained by deducting marketing costs from the gross value. Marketing costs include freight, cost of containers, commission and other charges incidental thereto.
- (iii) *Net Value of Production* represents local values less value of materials used in the process of production. Materials used in the process of production include seed, power, petrol and oils, fodder consumed by farm stock, manures, dips, sprays and other costs of a similar nature. No deductions from local values have been made for depreciation, certain maintenance charges, interest, or some other costs normally incurred.

Secondary Industries (Factories)

To place a value upon the production of factories, the following definitions are employed:

- (i) *Value of Output* is the value of goods manufactured and includes the amount received for repair work, work done on commission, &c. The basis is the selling value *at the factory*, exclusive of all delivery charges.
- (ii) *Value of Production* is the value of output *less* the value (at the factory) of the materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges).

In examining values for primary and secondary production, it will be seen that *gross value of production* is a concept confined to primary industries; that *local value* for primary industries is broadly analogous in concept with *value of output* for factories; that *net value of production* for primary industries is comparable with *value of production* for factories, since both are derived by deducting the value of materials used in the process of production, a procedure which eliminates possible duplication of values.

Comparing or Combining Industries

In comparing or combining production values for any of the previous industries, it is logically necessary to use only *net value of production* (primary) and *value of production* (secondary); both *gross* and *local* values will be found unsatisfactory because some degree of duplication will be involved. An obvious example of duplication can occur when the raw material for a factory process is the final product of a farm (e.g. the value of hops is contained in the *gross value of agriculture* and also in the *value of output of factories*, specifically of breweries). The primary-secondary relationship not only involves primary products becoming raw materials for factories but also factory products, (e.g. fertilisers) becoming essential materials for primary industries. Less obvious, perhaps, is the fact that one rural industry may supply the "raw material" for another rural industry (e.g. hay from *agriculture* consumed by livestock in the *pastoral* and *dairying* industries).

In the following chapter, *gross* and *local* values are shown for the various primary industries; the basic reason for publication is not to facilitate comparison and combination of these values for individual industries, or groups of industries, but rather to make explicit the process whereby *net value of production* has been computed.

In accordance with the previous definitions, net value of production for primary industries is computed by deducting the cost of materials used in the process of production from the local value. Details of such costs are not available for: (i) bee-farming; (ii) trapping; (iii) forestry; (iv) fishing. In the case of these industries, only local value can be computed.

Sources of Information—Value of Production

Primary Production, Rural

The data used are those concerning quantity of primary production (supplied principally by farmers, &c.) together with information collected from various sources on prices realised in the principal markets for different products, the costs of marketing these products and the costs of certain materials used in their production. Price and cost data are obtained from statutory

authorities, (e.g. Dairy Produce Equalisation Committee), market reports, special returns collected from wholesalers, brokers, auctioneers, etc., and from oversea and interstate trade statistics.

Primary Production, Non-Rural

(i) *Trapping*—Principal data are derived from export of skins and information on the annual mutton bird catch.

(ii) *Forestry*—Principal value data are available from the annual factory census, since forestry products are the basic raw material for sawmills, newsprint and paper mills, &c.

(iii) *Fishing*—Quantity data are supplied by fishermen and prices are collected from fish wholesalers and agents.

(iv) *Mining and Quarrying*—Principal value data are supplied by mine operators in the annual mining census.

Secondary Production

Factories—Both quantity and value data are supplied by factories in the annual factory census. Fuller details will be found in Chapter 8.

GROSS VALUE OF PRODUCTION

Rural Industries

The Rural Industries are defined, for value of production purposes, to comprise: (i) agriculture; (ii) pastoral; (iii) dairying; (iv) poultry; (v) bee-farming. These industries have no relation, however, to any classification of individual rural holdings on an industry basis; a single holding would, in fact, usually produce several products, some attributable to one and some to another such industry, (e.g. wheat and oats which would be counted in agriculture, wool in pastoral and milk in dairying). The industries represent merely a convenient grouping of the aggregate production of individual products.

Agriculture

The following table shows quantity and value details for the agricultural industry in 1963-64. Also included in the table is the "unit gross value", (i.e. the average price per unit).

Gross Value of Production—Agriculture, 1963-64

Crop	Unit of Quantity	Production	Unit Gross Value	Gross Value
Cereals for Grain—			\$	\$'000
Barley	Bush.	414,230	1.433	592
Oats	Bush.	843,643	0.758	639
Wheat	Bush.	482,757	1.433	692
Total Cereals for Grain .. .. .	..	..	..	(a) 1,927
Hay	Ton	249,176	16.000	3,987
Green Fodder .. .. .	..	..	..	916
Field Peas—				
Blue	Bush.	98,939	3.042	301
Grey and Other	Bush.	87,594	2.775	243
Total Field Peas .. .. .	..	..	..	544

Gross Value of Production—Agriculture, 1963-64—continued

Crop	Unit of Quantity	Production	Unit Gross Value	Gross Value
Vegetables for Stock Fodder—				
Horse Beans	Bush.	15,128	2.942	45
Turnips (Swede and White) .. ..	..	(b)	..	4,361
Other .. .. .	..	..	..	89
Total Vegetables for Stock Fodder	..	..	..	4,495
Grass Seed—				
Clover	Cwt.	483	75.783	36
Other	Cwt.	6,878	20.608	142
Total Grass Seed	..	..	..	178
Industrial Crops—				
Hops (Dry weight)	lb.	1,580,000	0.650	1,026
Mustard	lb.	117,623	0.100	12
Total Industrial Crops	..	..	..	1,038
Vegetables for Human Consumption—				
Beans—French and Runner	'000 lb.	3,495	68.456	239
Peas—Green (Ex-shell)	'000 lb.	32,943	52.121	1,717
Potatoes	Ton	66,420	64.875	4,309
Turnips	Ton	4,061	46.600	189
Total Vegetables for Human Consumption	..	..	..	(a) 7,436
Orchard Fruit—				
Apples	Bush.	8,545,000	2.040	17,436
Apricots	Bush.	36,000	2.308	83
Pears	Bush.	625,000	2.258	1,410
Total Orchard Fruit	..	..	..	(a) (c) 19,042
Small Fruit—				
Currants	lb.	2,955,000	0.119	350
Loganberries	lb.	977,000	0.075	75
Raspberries	lb.	3,841,000	0.104	398
Total Small Fruit	..	..	..	(a) 888
All Other Crops	..	..	..	497
Total Crops	..	..	..	40,948

(a) Includes other crops not specified in table.

(b) Not available.

(c) Government subsidy to compulsory hail insurance scheme excluded from Apples and Pears, but included in Total Orchard Fruit.

Average Unit Gross Values

In the next table, average unit gross values for the principal crops are shown for a five-year period. The unit values have been calculated for the principal agricultural products, by dividing the total quantity produced into the total gross value of production for each unit. They therefore represent weighted average "prices" of the product in all markets (including the farm itself where quantities are retained for farm use).



*Hop growing in the Derwent Valley near New Norfolk.
(The Mercury)*

*Spray irrigation for a potato crop near Scottsdale.
(The Mercury)*





*The open-cut in the Mt. Lyell copper deposit near Queenstown.
(Dept. of Film Production)*

Average Unit Gross Value of Principal Crops
(\$)

Crop	Unit	1959-60	1960-61	1961-62	1962-63	1963-64
Cereals for Grain—						
Barley ..	Bush.	1.333	1.442	1.450	1.392	1.433
Oats ..	Bush.	1.150	0.967	0.975	0.758	0.758
Wheat ..	Bush.	1.375	1.400	1.600	1.475	1.433
Hay ..	Ton	19.025	18.450	16.408	14.158	16.000
Field Peas—						
Blue ..	Bush.	4.092	4.500	3.000	2.500	3.042
Grey and Other	Bush.	2.667	2.558	2.300	2.858	2.775
Vegetables for Stock Fodder—						
Horse Beans ..	Bush.	2.633	2.700	2.500	3.000	2.942
Industrial Crops—						
Hops (Dry weight) ..	lb.	0.625	0.625	0.650	0.650	0.650
Vegetables for Human Consumption—						
Peas—Green (a)	'000 lb.	58.808	66.575	56.442	54.242	52.121
Potatoes ..	Ton	39.550	90.358	52.483	25.175	64.875
Turnips ..	Ton	37.333	46.000	46.658	46.658	46.600
Orchard Fruit—						
Apples ..	Bush.	1.883	1.942	1.992	2.142	2.040
Pears ..	Bush.	2.050	2.583	1.783	2.492	2.258
Small Fruit—						
Currants ..	lb.	0.106	0.119	0.117	0.112	0.119
Raspberries ..	lb.	0.092	0.081	0.096	0.102	0.104

(a) Ex-shell.

The following table summarises the gross value of production of agriculture for a five-year period:

Gross Value of Production—Agriculture
(\$'000)

Crop	1959-60	1960-61	1961-62	1962-63	1963-64
Cereals for Grain ..	1,414	1,121	2,012	2,123	1,927
Hay ..	4,208	6,016	4,683	4,432	3,987
Green Fodder ..	993	1,152	932	892	916
Field Peas ..	587	321	487	508	544
Vegetables for Stock Fodder ..	2,917	2,099	3,440	4,039	4,495
Grass Seed ..	88	164	129	270	178
Industrial Crops ..	1,768	1,772	1,863	1,879	1,038
Vegetables for Human Consumption ..	6,339	5,829	7,817	5,357	7,436
Orchard Fruit ..	11,350	12,149	16,876	14,716	19,042
Small Fruit ..	1,045	786	930	912	888
All Other Crops ..	270	381	501	422	497
Total All Crops ..	30,979	31,790	39,670	35,550	40,948

Three items in the previous table illustrate forcibly the duplication in values which can result from combining gross values of production for individual industries. The items are: (i) hay; (ii) green fodder; (iii) vegetables

for stock fodder, all being "raw materials" for the pastoral and dairying industries.

Pastoral, Dairying, Poultry and Bee-farming

For value of production purposes, the pastoral industry is taken to comprise the three products—wool (including wool on skins), cattle (other than culled dairy cows and bobby calves) slaughtered, and sheep and lambs slaughtered. Dairying is taken to comprise the three products—milk, dairy cattle (culled cows and bobby calves) slaughtered, and pigs slaughtered. Poultry comprises eggs and poultry slaughtered, and bee-farming honey and bees-wax produced.

The prime source of data on livestock slaughtered is information supplied by slaughtering establishments, supplemented by farmers' annual census returns giving details of slaughtering on farms. As sufficiently detailed information is not available on the types of cattle slaughtered to enable a precise dissection of total slaughtering to be made between the pastoral and dairying industries, data on the known culling rate in dairy herds is also used for this purpose.

The table that follows gives details of the gross value of production for each of the products of these industries:

Gross Value of Production—Pastoral, Dairying, Poultry and Bee-farming
(\$'000)

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
Pastoral—					
Shorn Wool (including Crutchings)	14,990	13,242	14,264	16,195	19,359
Other Wool (a)	1,518	1,216	1,488	1,577	1,993
Sheep and Lambs Slaughtered (b) (c)	4,212	4,452	3,590	4,090	4,662
Cattle Slaughtered (b) (d)	6,044	4,108	3,968	5,674	6,830
Total	26,764	23,018	23,310	27,536	32,844
Dairying—					
Milk	15,426	14,240	15,252	17,008	18,366
Cattle Slaughtered (b) (d)	1,726	1,684	1,606	1,192	1,418
Pigs Slaughtered (b)	2,718	2,564	2,696	3,204	3,688
Total	19,870	18,488	19,554	21,404	23,472
Poultry—					
Eggs	3,480	3,530	3,686	3,704	3,764
Poultry Slaughtered					
Total	3,480	3,530	3,686	3,704	3,764
Bee-farming—					
Honey	44	70	46	94	112
Beeswax	4	4	4	2	4
Total	48	74	50	96	116

(a) Dead, fellmongered and wool on skins exported.

(b) Includes adjustment for net exports of livestock.

(c) Excluding value of wool on skins.

(d) Culled dairy calves and bobby calves slaughtered are allocated to dairying; all other cattle slaughtered to pastoral.

An adjustment is made to the value of animals slaughtered to allow for the net export of livestock from the State. Otherwise, no allowance is made in the pastoral and dairying industries for the raising of livestock or their sale, except at the point of slaughter. In particular, in contrast with the practice in some other fields, (e.g. taxation), no allowance is made for changes in livestock inventories.

Primary Industries

The following table brings together gross values of production for all primary industries for a five-year period:

Gross Value of Production—Primary Industries
(\$ million) (a)

Industry	1959-60	1960-61	1961-62	1962-63	1963-64
Agriculture	31.0	31.8	39.7	35.6	40.9
Pastoral	26.8	23.0	23.3	27.5	32.8
Dairying	19.9	18.5	19.6	21.4	23.5
Poultry	3.5	3.5	3.7	3.7	3.8
Bee-farming	(b)	0.1	(b)	0.1	0.1
Total Rural	81.1	76.9	86.3	88.3	101.1
Trapping	0.6	0.4	0.4	0.5	0.5
Forestry	12.6	13.1	11.7	13.1	13.7
Fishing	1.6	1.9	2.3	2.3	2.2
Mining and Quarrying ..	17.9	18.8	18.9	20.8	23.4
Total Non-Rural	32.7	34.3	33.3	36.7	39.8
Total Primary	113.8	111.2	119.5	125.0	140.9

(a) Rounded to nearest \$100,000 without adjustment to add to totals.

(b) Less than \$50,000.

NET VALUE OF PRODUCTION—ALL RECORDED INDUSTRIES

Definition

In the preliminary section dealing with definitions, it was emphasised that *gross values of production* are unsuitable for making comparisons or for combining individual industries or groups of industries. In fact, it is impossible to make a comparison between gross value of production for primary industries and for factories, since gross value of production is not collected for factories; the primary-secondary comparison (or combination) can only be made on the basis of *net value of production* (primary industries) and *value of production* (factories).

Net Value, 1963-64

The next table shows, in detail for 1963-64, the method whereby gross values (primary industries) are reduced to local values and then further reduced to net values; also, the reduction of value of output (factories) to value of production. It will be noted that the combination of primary and secondary industries is made only in respect of the final column, where the net value of production (primary) is added to the value of production (factories).

*Value of Production***Value of Production—All Recorded Industries, 1963-64**
(\$ million) (a)

Industry	Gross Production Valued at Principal Market	Less Marketing Costs	Local Value, (i.e. Gross Production Valued at Place of Production)	Less Cost of Materials, Fuel, &c. Used	Net Value of Production
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PRIMARY

Rural—					
Agriculture ..	40.9	9.0	31.9	6.3	25.7
Pastoral ..	32.8	2.0	30.8	11.2	19.6
Dairying ..	23.5	1.0	22.5	5.7	16.8
Poultry ..	3.8	0.4	3.4	2.1	1.3
Bee-farming (b) ..	0.1	(c)	0.1	..	0.1
Total Rural ..	101.1	12.4	88.7	25.3	63.4
Non-Rural—					
Trapping (b) ..	0.5	(c)	0.5	..	0.5
Forestry (b) ..	13.7	2.0	11.6	..	11.6
Fishing (b) ..	2.2	0.5	1.7	..	1.7
Mining & Quarrying ..	23.4	3.1	20.3	5.8	14.5
Total Non-Rural	39.8	5.7	34.1	5.8	28.3
Total Primary	140.9	18.1	122.8	31.2	91.7

SECONDARY

Industry	Value of Output	Less Cost of Materials, Fuel, &c. Used	Value of Production
Factories	341.1	188.5	152.6

ALL INDUSTRIES

Net Value of Production, Primary and Secondary Industries	244.2
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General Note: Reference is made to value definitions in the introduction to this section.

(a) Rounded to nearest \$100,000 without adjustment to add to totals.

(b) Gross and local values available, but production costs not available.

(c) Under \$50,000.

Cost of Materials, Fuel, &c. Used

In the previous table, *local value* has been reduced to *net value of production* (primary) and *value of output* to *value of production* (factories); in each case, the process involved deduction of certain costs. Full details of factory costs appear in Chapter 8, "Secondary Industry—Manufacturing"; the following table has been compiled to show details of those costs taken into account in primary industries.

Primary Industries—Recorded Costs, 1963-64
(\$'000)

Cost Item	Agriculture	Pastoral	Dairying	Poultry	Mining and Quarrying	Total
RURAL						
Seed	2,256	442	190	..	..	2,888
Fertilizers	1,110	2,230	956	..	..	4,296
Spraying, Sheep-Dip	1,080	110	24	..	..	1,214
Stock Feed	122	7,712	3,816	2,036	..	13,686
Water for Irrigation	98	44	44	..	..	186
Power, Fuel & Light	1,588	710	672	94	..	3,064
Total Rural ..	6,254	11,248	5,702	2,130	..	25,334
NON-RURAL						
Total (a)	(a) 5,838	(a) 5,838

RURAL AND NON-RURAL (b)

Total Primary	6,254	11,248	5,702	2,130	5,838	31,172
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(a) Includes power, fuel and light (\$820,000) and cost of repairs, timber, explosives and other expendable stores used in mining and quarrying (\$5,018,000).

(b) Costs not available for bee-farming, trapping, forestry and fishing.

Net Value—Summary

The next table summarises, for a five-year period, the net value of production for all recorded industries.

Net Value of Production—All Recorded Industries
(\$ million) (a)

Industry	1959-60	1960-61	1961-62	1962-63	1963-64
Primary, Rural—					
Agriculture	21.3	21.9	25.9	22.3	25.7
Pastoral	15.7	12.8	11.7	15.1	19.6
Dairying	13.9	13.2	13.6	15.0	16.8
Poultry	1.1	1.1	1.1	1.2	1.3
Bee-farming (b)	(c)	0.1	(c)	0.1	0.1
Total Rural	52.0	49.1	52.3	53.7	63.4
Primary, Non-Rural—					
Trapping (b)	0.6	0.4	0.3	0.5	0.5
Forestry (b)	11.0	11.5	10.2	11.3	11.6
Fishing (b)	1.4	1.6	1.8	1.8	1.7
Mining and Quarrying	10.8	11.0	10.4	12.2	14.5
Total Non-Rural	23.8	24.5	22.7	25.8	28.3
Total Primary	75.8	73.6	75.0	79.5	91.7
Secondary—					
Factories	120.4	124.9	127.9	142.0	152.6
Total Industries	196.2	198.5	202.9	221.5	244.2

(a) Rounded to the nearest \$100,000 without adjustment to add to totals.

(b) Local value of production.

(c) Less than \$50,000.

Net Value of Production, 1964-65

The following table has been compiled to give the latest data available and to compare net value of production (1964-65) with corresponding values for 1963-64:

Net Value of Production—All Recorded Industries

Industry	1963-64 (a)	1964-65 (a)	Increase, 1964-65 above 1963-64
Primary, Rural—	\$ mill.	\$ mill.	Per Cent
Agriculture	25.7	27.2	5.8
Pastoral	19.6	21.0	7.1
Dairying	16.8	19.0	13.1
Poultry	1.3	1.6	23.1
Bee-farming (b)	0.1	0.1	0.0
Total Rural	63.4	69.0	8.8
Primary, Non-Rural—			
Trapping (b)	0.5	0.4	—20.0
Forestry (b)	11.6	13.3	14.7
Fishing (b)	1.7	2.2	29.4
Mining and Quarrying	14.5	18.2	25.5
Total Non-Rural	28.3	34.0	20.1
Total All Primary	91.7	103.0	11.2
Secondary—			
Factories	152.6	167.3	9.6
Total Industries	244.2	270.3	10.7

(a) Rounded to the nearest \$100,000 without adjustment to add to totals.

(b) Local value of production.

Chapter 8

SECONDARY INDUSTRY—MANUFACTURING

FACTORIES

Historical

The evolution of Tasmanian farming is described in continuous annual statistics from 1818 but the early records relating to factories are extremely meagre. While the early colonial statisticians had immediately put on record such fundamental measures as acreages, crop yields and livestock numbers, they were content, in the matter of factories, to merely classify and count the number of establishments. Some concept of early manufacturing activity can be derived from the following table which has been adapted from the *Statistical Returns of Van Diemen's Land, 1824 to 1839*:

Comparative Account of Manufactories and Trades in Van Diemen's Land

Description of Establishment		Number of Establishments		Description of Establishment		Number of Establishments	
		1824	1838			1824	1838
Agricultural Implement Makers .. ..	..	..	9	Mills, Steam .. ..	..	..	3
Breweries	3	19	19	Mills, Water and Wind ..	5	51	51
Candle Makers .. ..	..	..	4	Potteries .. ..	..	..	1
Cooperages .. ..	..	..	9	Printing Offices	1	8	8
Coachmakers .. ..	..	..	2	Ropemakers	1	1	1
Distilleries	1	4	4	Sailmakers	1	5	5
Dyers .. ..	..	..	2	Sawmills	1	2	2
Engineers .. ..	..	..	7	Shipwrights .. ..	..	5	5
Fellmongers	2	4	4	Snuff Makers .. ..	..	1	1
Foundries .. ..	..	..	3	Soap Makers	1	1	1
Furriers .. ..	..	..	2	Tanners	6	15	15
Mast and Block Makers ..	..	..	1	Wool Staplers .. ..	..	3	3

The grinding of wheat for flour gave rise to the first demand for power, the original solution being water mills and windmills followed by use of the steam engine (the first steam mill commenced in 1831). Later records refer to "mills, horse-driven", the beast being driven around an endless circle. The relation between early factory activity and the farming and whaling economy in which it grew is indicated by the fact that, in the table, five of the descriptions (fellmongers, &c.) refer to processing of animal products, four (shipwrights, &c.) to the construction and maintenance of ships and two (breweries, &c.) to the making of alcoholic beverages for which there were nearly as many licensed outlets as exist today.

The *Account of Manufactories and Trades*, on a simple establishment basis similar to the last table, was published annually right throughout the 19th century and is at least a guide to the introduction of new industries and new skills to the State. The first attempt to value output occurred in the government sector; Table 38 of the *Statistics of Van Diemen's Land, 1824-1839*, puts a value on the work of boy prisoners at Point Puer according to the numbers engaged

in various occupations (e.g. carpenters, blacksmiths, tailors, sawyers, stonemasons, &c.). A more comprehensive value series is found in Table 41 entitled "A return showing the amount of labour expended (reduced to weeks) at Port Arthur, and the value of such labour during each year from 1830 to 1838". In this series, the convicts were classified according to trade, and their annual labour contribution, first compiled in weeks, was valued according to standard rates put upon a week's work for each calling (e.g. blacksmiths, \$1.70; tailors, \$0.80; shoemakers, \$1.10). Presumably the compiler had been influenced by the writings of Adam Smith or David Ricardo to accept the labour theory of value. Over the period of the table, the total "value of labour" increased from \$376 (1830) to \$36,962 (1838).

The presentation of factory statistics, in the private sector, on a simple establishment basis failed to answer a number of questions such as the number of employees, the quantities produced, the value of output, the capital invested, &c., and this lack of information persisted until 1882 when the Government Statistician began publishing quantity, value and employment data for jam factories and breweries; the coverage of industries was then gradually expanded until, by 1911, publication had commenced of annual factory statistics showing most of the basic information sought in current collections.

Some indication of the transformation of Tasmania from a basically rural economy is given in the following table in which the proportion of the work force engaged in manufacturing activities is compared over the period 1911 to 1961:

Employment in Tasmanian Factories Compared with Total Work Force

Particulars	1911	1921	1933	1947	1954	1961
Work Force (a)—						
Males ..	61,182	65,998	69,226	80,201	93,976	101,289
Females ..	13,343	14,001	16,861	20,117	24,232	29,628
Persons ..	74,525	79,999	86,087	100,318	118,208	130,917
Factory Employment (b)—						
Males ..	8,737	8,525	7,147	16,186	20,249	24,811
Females ..	1,561	1,602	2,086	3,751	4,340	5,347
Persons ..	10,298	10,127	9,233	19,937	24,589	30,158
Factory Employment as Percentage of Work Force—						
Males ..	14.3	12.9	10.3	20.2	21.5	24.5
Females ..	11.7	11.4	12.4	18.6	17.9	18.0
Persons ..	13.8	12.7	10.7	19.9	20.8	23.0

(a) Source—censuses of population in years shown; includes employers and self-employed.

(b) Average number of persons engaged, including working proprietors, as reported in annual factory censuses for 1911, 1921 and for financial years ending in 1933, 1947, 1954 and 1961.

Electric Power and Industrialisation

In 1900, the Government Statistician published operational details of Tasmania's chief manufacturing industries; these read in part as follows (with specification of the number of "hands" employed): Sawmills, 920 hands; Jam Factories, 499; Boot Factories, 364; Brickyards and Potteries, 247; Woollen Mills, 177; Tanneries and Fellmongeries, 131; Flour Mills, 126; Breweries, 97; Butter Factories, 92; Fruit-drying, 76; Soap and Candle Factories, 57; Bark Mills, 33; Bacon Factories, 18. At this point in time, virtually all

power was generated by steam engine on the factory site, the alternative sources such as "gas, oil and electricity" being very little used. A year later the establishment of the Commonwealth of Australia introduced free trade between the States and this deprived Tasmanian industries of the protection which they had previously enjoyed. The free importation of Australian manufactures, chiefly from Victoria, brought about a period of stagnation and inhibited the further development of manufacturing industry within the State; loss of population by migration to other parts of Australia in each decade up to World War II reflected the lack of employment opportunities which an expansion of manufacturing activity would have provided.

If no new factor had been introduced in the years after Federation, the probability is that Tasmania would have maintained a predominantly rural economy, diversified to a limited extent by sawmilling and mining. In these circumstances, employment opportunities would have been severely restricted and the more industrialised continental States would have continued to drain off the island's population growth attributable to natural increase. The new factor that eventually transformed the State's economy was hydro-electric power but its possibilities could not be exploited without heavy capital expenditure and massive construction works, all of which required time. It is paradoxical, therefore, that the first major hydro-electric construction works were initiated in a period of stagnation immediately prior to World War I, and that the second major construction phase was pushed forward during the 1930's when the State's factory activity was at a very low ebb due to the general economic depression.

The key to the further industrialisation of Tasmania was its abundant supply of water at high level in the central plateau and the State's industrial revolution may be thought as beginning in 1916 when the Waddamana turbines below the Great Lake began operating; from the initial 10,000 horsepower then developed, the hydro-electric system has expanded to today's capacity of over one million horsepower. The availability of cheap electric power resulted in the establishment of new types of industry, some on a very large scale; examples are: electrolytic zinc production, 1917; carbide manufacture, 1918; cement manufacture, 1930; paper production, 1938; newsprint production, 1941; aluminium production, 1955; ferro-manganese production, 1962. The introduction of paper and newsprint manufacture is a special case to the extent that changes in technology made possible the use of native hardwoods for the first time; the production of a suitable pulp from eucalypts was pioneered in Tasmania before other plants were established in the continental States.

Given that electrical power is cheap and abundant, the question arises as to why the industrialisation of the State has not progressed faster and further. The two obvious impediments to the rapid introduction of new enterprises are the small size of the local market and the costs of transportation to the principal markets in the continental States. The weighing of these factors, (i.e. cheaper power against possibly higher transportation costs), has naturally had the effect of attracting industries requiring large quantities of power. Such undertakings are not necessarily large employers of labour so it is possible that industrialisation, measured by capital investment and electrical power consumption, may have progressed more rapidly than industrialisation measured by involvement of the work force in factory activities.

Definitions in Factory Statistics

The statistics dealing with factories have been compiled from returns collected under the authority of the Commonwealth *Census and Statistics Act* and supplied annually by manufacturers. A return must be supplied for every

factory, which is defined for this purpose as an establishment where four or more persons are employed or where power (other than manual) is used in any manufacturing process.

If a manufacturing business is conducted in conjunction with any other activity, particulars relating to the manufacturing section only are included in the statistics. Where two or more industries are conducted in the same establishment, a separate return is obtained for each industry, if practicable.

Manufacturers are required to state in their returns particulars of the number, wages, &c. of their employees, the value of premises and equipment and of factory stocks, the horsepower of machinery, the value, and, in many cases, the quantities of raw materials and fuel used, and quantities and values of principal articles produced. The returns obtained from manufacturers are not intended to show a complete record of the income and expenditure of factories nor to show the profits or losses of factories collectively or individually.

Employment Definitions

The average number of persons employed is compiled on two different bases: the average during the period of operation, and the average over the whole year. Of these, the former is simply the aggregate of the average number of persons employed in each factory during its period of operation (whether the whole or only part of the year). This average is used only for details dealing with the classification according to the number of persons employed. The latter, which is used in all other instances, is calculated by reducing the average number working in the factories to the equivalent number working for a full year.

Working proprietors are included in all employment figures other than those dealing with monthly employment, but salaries and wages paid in all cases exclude drawings by working proprietors.

Value Definitions

The value of factory output is the value of goods manufactured or their value after passing through the particular process of manufacture, and includes the amount received for repair work, work done on commission and receipts for other factory work. The basis of the valuation of the output is the selling value of the goods at the factory, exclusive of all delivery costs and charges and excise duties, but inclusive of Government bounty and subsidy payments to the manufacturer of the finished article.

The value of production is the value added to raw materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of those items of cost, other than wages and salaries, specified on the factory statistical collection form, namely materials used, containers and packing, power, fuel and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges); the remainder so derived constitutes the value added to raw materials in the process of manufacture, and represents the amount available for wages, taxation, rent, interest, insurance, &c. and profit.

Avoidance of Duplication in Values: It is considered that, because of the duplication of materials used (which means that the finished product of one process of manufacture often forms raw material for another), an inaccurate impression would be obtained by using the value of factory output in inter-industry and in year-to-year comparisons. Woollen manufactures will illustrate the point. Greasy wool forms the raw material for the woolscouring industry, the product of which is scoured wool. This is afterwards combed into wool tops

which are used in the spinning mills for the manufacture of yarn. In due course, the yarn is woven into cloth, the raw material for the clothing industry. If these processes are carried out separately in different factories, it is evident that the value of the wool would be counted at each of the five stages of manufacture, assuming value of output was used as the basis for comparisons.

The concept of *value added* (i.e. value of production) prevents this double counting and gives a truer picture of the relative economic importance of industries.

Classification of Factories

In the compilation of statistical data dealing with factories in Australia, a standard classification of manufacturing industries, formulated at a Conference of Australian Statisticians in 1902 and periodically revised, was used until the year 1929-30. A new classification based on that used in Great Britain for census purposes was introduced in 1930-31, and this, revised and extended to a minor degree in regard to sub-classes of industry in accordance with decisions of the Statisticians' Conference, 1945, still obtains.

It should be noted that where a factory, engaged in the production of such goods as would entitle it to a classification in more than one sub-class of industry, is unable to give separate production costs, &c. for such activities, it is classified to the predominant activity of such factory.

The list that follows shows *all* the classes and sub-classes in the current Commonwealth classification of factories. Each sub-class is followed by *the number of Tasmanian factories classified to that sub-class for the year 1963-64*. It will be noted that many sub-classes contain a nil entry, indicating that no factory of this type exists in Tasmania, or alternatively, that no factory entitled to classification in more than one sub-class engages predominantly in the described activity. Despite this, the complete list has been given because the fact that particular types of industry do not exist in Tasmania may be just as significant as the fact that other types do exist.

Classification of Factories Showing Number in Each Class and Sub-Class of Industry, 1963-64

Class and Sub-Class	Number of Factories
<i>Class I. Treatment of Non-Metalliferous Mine and Quarry Products</i>	
1. Coke Works .. .. .	..
2. Briquetting and Pulverised Coal .. .. .	..
3. Carbide	1
4. Lime, Plaster of Paris, Asphalt	7
5. Fibrous Plaster and Products	13
6. Marble, Slate, etc... .. .	4
7. Cement, Portland	1
8. Asbestos Cement Sheets and Mouldings	1
9. Other Cement Goods	31
10. Other .. .. .	..
Class Total I	58
<i>Class II. Bricks, Pottery, Glass, &c.</i>	
1. Bricks and Tiles	9
2. Earthenware, China, Porcelain, Terra Cotta	3
3. Glass (other than Bottles)	6
4. Glass Bottles	1
5. Other .. .. .	..
Class Total II	19

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1963-64—continued**

Class and Sub-Class	Number of Fac- tories
<i>Class III. Chemicals, Dyes, Explosives, Paints, Oils, Grease</i>	
1. Industrial and Heavy Chemicals and Acids	2
2. Pharmaceutical and Toilet Preparations .. .. .	..
3. Explosives (including Fireworks) .. .. .	..
4. Whitelead, Paints, Varnishes	3
5. Oils, Vegetable .. .. .	..
6. Oils, Mineral .. .. .	..
7. Oils, Animal .. .. .	..
8. Boiling Down, Tallow Refining	11
9. Soap and Candles	3
10. Chemical Fertilisers	8
11. Inks, Polishes, &c. .. .. .	..
12. Matches .. .. .	..
13. Other	1
Class Total III	28
<i>Class IV. Industrial Metals, Machines, Conveyances</i>	
1. Smelting, Converting, Refining, Rolling of Iron and Steel ..	..
2. Foundries (Ferrous)	3
3. Plant, Equipment and Machinery, incl. Machine Tools ..	30
4. Other Engineering	84
5. Extracting and Refining of Other Metals; Alloys	4
6. Electrical Machinery, Cables and Apparatus	23
Construction and Repair of Vehicles—	
Tramcars and Railway Rolling Stock—	
7. Government and Municipal	4
8. Other	1
Motor Vehicles—	
9. Construction and Assembly	1
10. Repairs	335
11. Motor Bodies	52
12. Horse Drawn Vehicles .. .. .	..
13. Motor Accessories	3
15. Cycles, Foot and Hand Driven, and Accessories	2
16. Other Conveyances .. .. .	..
Ship and Boat Building and Repairing, Marine Engineering—	
17. Government .. .. .	..
18. Other	10
19. Cutlery and Small Hand Tools	1
20. Agricultural Machines and Implements	5
Non-ferrous Metals—	
21. Rolling and Extrusion	1
22. Founding, Casting, &c.	8
24. Sheet Metal Working, Pressing and Stamping	30
25. Pipes, Tubes and Fittings—Ferrous .. .. .	..
26. Wire and Wire Working (incl. Nails)	9
27. Stoves, Ovens and Ranges	1
28. Gas Fittings and Meters .. .. .	..
29. Lead Mills .. .. .	..
30. Sewing Machines	1
31. Arms, Ammunition (excl. Explosives) .. .. .	..
32. Wireless and Amplifying Apparatus	8
33. Other Metal Works	2
Class Total IV	618
<i>Class V. Precious Metals, Jewellery, Plate</i>	
1. Jewellery .. .. .	..
2. Watches and Clocks (incl. Repairs)	15
3. Electroplating (Gold, Silver, Chromium, &c.)	4
Class Total V	19

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1963-64—continued**

Class and Sub-Class	Number of Factories
<i>Class VI. Textiles and Textile Goods (not Clothing except Knitted)</i>	
1. Cotton Ginning .. .. .	..
2. Cotton Spinning and Weaving	1
3. Wool: Carding, Spinning, Weaving	4
4. Hosiery and Other Knitted Goods	3
5. Silk, Natural .. .. .	..
6. Rayon, Nylon and Other Synthetic Fibres	3
7. Flax Mills .. .. .	..
8. Rope and Cordage .. .. .	..
9. Canvas Goods, Tents, Tarpaulins, &c.	6
10. Bags and Sacks .. .. .	..
11. Textile Dyeing, Printing and Finishing	1
12. Other	2
Class Total VI	20
<i>Class VII. Skins and Leather (not Clothing or Footwear)</i>	
Furs, Skins, Leather—	
1. Furriers and Fur Dressing .. .. .	..
2. Woolscouring and Fellmongery	1
3. Tanning, Currying and Leather Dressing	1
Saddlery, Harness, Bags, Trunks and Other Goods of Leather and Leather Substitutes—	
4. Saddlery, Harness and Whips	2
5. Machine Belting (Leather or Other) .. .. .	..
6. Bags, Trunks and Other Goods of Leather and Leather Substitutes	1
Class Total VII	5
<i>Class VIII. Clothing (except Knitted)</i>	
1. Tailoring and Ready-made Clothing	14
2. Waterproof and Oilskin Clothing .. .. .	..
3. Dressmaking, Hemstitching	2
4. Millinery .. .. .	..
5. Shirts, Collars, Underclothing .. .. .	..
6. Foundation Garments .. .. .	..
7. Handkerchiefs, Ties, Scarves	1
8. Hats and Caps .. .. .	..
9. Gloves .. .. .	..
10. Boots and Shoes (not Rubber)	2
11. Boot and Shoe Repairing	37
12. Boot and Shoe Accessories .. .. .	..
13. Umbrellas and Walking Sticks .. .. .	..
14. Dyeworks and Cleaning (incl. Renovating and Repairing)	31
15. Other .. .. .	..
Class Total VIII	87
<i>Class IX. Food, Drink and Tobacco</i>	
1. Flour Milling	5
2. Cereal Foods and Starch	2
3. Animal and Bird Foods	8
4. Chaffcutting and Corncrushing .. .. .	..
5. Bakeries (incl. Cakes and Pastry)	141
6. Biscuits	1
7. Sugar Mills .. .. .	..
8. Sugar Refining .. .. .	..
9. Confectionery (incl. Chocolate and Icing Sugar)	5
10. Jam, Fruit and Vegetable Canning	18
11. Pickles, Sauces, Vinegar .. .. .	..
12. Bacon Curing	15
13. Butter Factories	12
14. Cheese Factories	8

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1963-64—continued**

Class and Sub-Class	Number of Fac- tories
<i>Class IX. Food, Drink and Tobacco—continued</i>	
15. Condensed and Dried Milk Factories	4
16. Margarine	1
17. Meat and Fish Preserving	10
18. Condiments, Coffee, Spices	6
19. Ice and Refrigerating	23
20. Salt .. .. .	..
21. Aerated Waters, Cordials, &c.	13
22. Breweries	2
23. Distilleries .. .. .	..
24. Winemaking .. .. .	..
25. Cider and Perry	1
26. Malting	1
27. Bottling .. .. .	..
28. Tobacco, Cigars, Cigarettes, Snuff .. .. .	..
29. Dehydrated Fruit and Vegetables	4
30. Ice Cream	2
31. Sausage Skins	2
33. Other	1
Class Total IX	285
<i>Class X. Sawmills, Joinery Works, Boxes and Cases, Woodturning and Woodcarving</i>	
1. Sawmills	305
2. Plywood Mills (incl. Veneers)	2
3. Bark Mills	1
4. Joinery	109
5. Cooperage	3
6. Boxes and Cases	9
7. Woodturning, Woodcarving, &c.	6
8. Basketware and Wickerware, (incl. Seagrass and Bamboo Furniture)	2
9. Perambulators (incl. Pushers and Strollers) .. .. .	..
10. Wall and Ceiling Boards (not Plaster or Cement)	2
11. Other	1
Class Total X	440
<i>Class XI. Furniture of Wood, Bedding, &c.</i>	
1. Cabinet and Furniture Making (incl. Billiard Tables and Upholstery)	56
2. Bedding and Mattresses (not Wire)	8
3. Furnishing Drapery .. .. .	..
4. Picture Frames .. .. .	..
5. Blinds	6
Class Total XI	70
<i>Class XII. Paper, Stationery, Printing, Bookbinding, &c.</i>	
1. Newspapers and Periodicals	5
2. Printing, Government	1
3. Printing, General, incl. Bookbinding	30
4. Manufactured Stationery .. .. .	..
5. Stereotyping, Electrotyping .. .. .	..
6. Process and Photo Engraving .. .. .	..
7. Cardboard Boxes, Cartons and Containers	2
8. Paper Bags	3
9. Paper Making	4
10. Pencils, Penholders, Chalks, Crayons .. .. .	..
11. Other	1
Class Total XII	46

**Classification of Factories Showing Number in Each Class and Sub-Class of Industry,
1963-64—continued**

Class and Sub-Class	Number of Factories
<i>Class XIII. Rubber</i>	
1. Rubber Goods (incl. Tyres Made) .. .. .	..
2. Tyre Retreading and Repairing	20
Class Total XIII	20
<i>Class XIV. Musical Instruments</i>	
1. Gramophones and Gramophone Records .. .. .	..
2. Pianos, Piano Players, Organs .. .. .	..
3. Other .. .. .	..
Class Total XIV .. .. .	..
<i>Class XV. Miscellaneous Products</i>	
1. Linoleum, Leathercloth, Oilcloth, &c. .. .. .	..
2. Bone, Horn, Ivory and Shell .. .. .	..
3. Plastic Moulding and Products	1
4. Brooms and Brushes	2
5. Optical Instruments and Appliances	3
6. Surgical and Other Scientific Instruments and Appliances	1
7. Photographic Material (incl. Developing and Printing)	1
8. Toys, Games and Sports Requisites	2
9. Artificial Flowers .. .. .	..
10. Other	4
Class Total XV	14
<i>Class XVI. Heat, Light and Power</i>	
Electric Light and Power—	
1. Government	12
2. Local Authority .. .. .	..
3. Companies	3
Gasworks—	
4. Government .. .. .	..
5. Local Authority .. .. .	..
6. Companies	2
Class Total XVI	17
Grand Total—All Classes	1,746

Summary of Factory Statistics

In the tables that follow, factory statistics, where appropriate, are presented in terms of the class of industry but not of sub-class. (Details for individual sub-classes appear in the bulletin *Secondary Industries*, a publication of the Tasmanian Office of the Bureau of Census and Statistics.)

The next table has been compiled to show factory development over the last fifty years as measured by number of factories, employment, value of production, &c. In making comparisons over so long a period, account should be taken of changes in the purchasing power of money.

Development of Factories from 1911—Selected Years

Year	Number of Factories	Average Number of Persons Engaged (a)	Salaries and Wages Paid (b)	Value of—			
				Materials Used, Fuel, &c. (c)	Production (d)	Output	Land, Buildings, Plant and Machinery
	No.	No.	\$ mill.	\$ mill.	\$ mill.	\$ mill.	\$ mill.
1911 ..	609	10,298	1.7	4.2	2.9	7.1	4.5
1920 ..	616	10,225	3.0	8.8	5.5	14.3	5.8
1924-25	675	10,998	3.8	8.4	7.3	15.7	17.7
1929-30	845	10,820	4.1	10.0	7.1	17.1	19.9
1934-35	926	10,555	3.2	8.1	6.3	14.4	17.5
1939-40	980	14,670	5.4	13.5	12.5	26.0	21.1
1944-45	1,006	19,511	10.0	24.9	17.8	42.7	26.9
1949-50	1,456	23,506	19.3	51.5	38.7	90.2	44.8
1954-55	1,597	25,452	37.7	101.0	76.2	177.2	118.9
1959-60	1,683	29,662	57.6	147.7	120.4	268.1	251.3
1960-61	1,766	30,158	60.7	151.0	124.9	275.9	259.7
1961-62	1,760	30,070	61.4	155.7	127.9	283.6	280.7
1962-63	1,764	30,755	64.8	170.5	142.0	312.5	301.9
1963-64	1,746	31,833	70.6	188.5	152.6	341.1	310.1
1964-65	1,805	32,580	76.5	214.2	167.3	381.5	364.3

(a) Average for whole year after 1927-28; earlier averages relate to the period of operation. Includes working proprietors.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, &c., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges (e.g. rates, land tax, &c.) not specified on the factory form.

(d) Value of output less cost of materials used, fuel, &c. as defined in note (c).

Earlier, reference was made to the role played by hydro-electric power in the development of Tasmania's manufacturing industries. The next table has been compiled to show the sources of power employed to drive machinery in factories, and also the power available in the central electric stations; these series cannot be taken back to 1911 but the start-point, 1938-39, is early enough to illustrate the rapid growth in the application of industrial power.

Engines and Motors Employed in Factories; Generators in Central Electric Stations ('000 Horsepower)

Year	Factories—Rated Horsepower of Engines Ordinarily in Use (a)				Generators in Central Electric Stations (b)		
	Steam	Internal Combustion	Electric (c)	Total (d)	Total Installed Capacity	Effective Capacity	Maximum Load
1938-39	4.0	2.5	55.9	62.5	158.9	126.0	117.0
1949-50	4.6	8.7	131.5	145.0	256.0	267.7	262.5
1959-60	1.2	11.7	251.9	265.1	778.8	771.0	587.1
1960-61	1.1	10.9	268.0	280.2	817.8	812.7	622.5
1961-62	1.0	10.9	269.6	281.7	851.4	846.4	648.6
1962-63	1.0	11.5	290.2	302.7	884.9	879.9	778.3
1963-64	0.6	11.7	302.3	314.6	1,078.0	1,073.0	800.5
1964-65	0.5	13.2	308.5	322.2	1,149.1	1,144.2	828.4

(a) Excluding central electric stations.

(b) The kilowatt measures for the stations have been changed to horsepower equivalents.

(c) Excludes motors driven by electricity of plant's own generation.

(d) Includes, until 1962-63, small amounts of water power driving factory machinery directly.

The effective capacity of the central electric stations is obviously more than adequate to meet the power needs of machines in factories but there is additional demand for power for metallurgical refining (e.g. electric furnaces and electrolytic processes), for traction and for commercial, farming and domestic purposes. In 1964-65, machines in Tasmanian factories were driven by engines and electric motors with a total rating of 322,200 horsepower of which 96 per cent was available from electric motors.

Factories in Tasmania and Other Australian States

A comparison of Tasmanian factory activity with that in other States is shown in the following table. To compare the relative intensity of factory activity in the Australian States, account needs to be taken of their widely different populations and the first column in the table—"Population Relativity"—calls attention to this fact.

Australian States—Factories, 1963-64

State	Popula- tion Relat- ivity (a)	Facto- ries	Employment (Average Whole Year including Working Proprietors)	Salaries and Wages Paid (b)	Value of—			
					Materials Used, Fuel, &c. (c)	Produc- tion (d)	Out- put	Land, Buildings, Plant and Machinery
		No.	No.	\$ mill.	\$ mill.	\$ mill.	\$ mill.	\$ mill.
N.S.W. . .	11.2	23,641	487,403	1,100	3,068	2,266	5,334	2,960
Victoria . .	8.4	17,597	413,120	912	2,303	1,750	4,053	2,061
Queensland	4.3	5,955	110,696	219	850	442	1,292	520
S.A. . .	2.8	5,826	110,813	240	634	428	1,062	561
W.A. . .	2.1	4,609	55,705	109	325	231	556	274
Tasmania	1.0	1,746	31,833	71	188	153	341	310
Total . .	29.8	59,374	1,209,570	2,651	7,368	5,270	12,638	6,686

(a) Tasmania's total mean population for 1963-64 is expressed as 1.0; other State populations in proportion to 1.0.

(b) Excludes drawings of working proprietors.

(c) Includes materials used plus cost of power, fuel, light, water and lubricating oils, containers, packing, &c., tools replaced and repairs to plant but excludes depreciation allowance and sundry overhead charges not specified on the factory form.

(d) Value of output less cost of materials used, fuel, &c., as defined in note (c).

Applying the appropriate population relativity factors to Tasmanian factory figures, it will be seen that, on most indicators, Tasmania is relatively more industrialised than W.A. and Queensland, that its pro-rata value of production approximates that of S.A. and that its pro-rata value of land, buildings, plant and machinery exceeds that of any other State. In regard to the last comparison (land, buildings, plant, &c.), account should be taken of the fact that central electric stations are treated as factories for the purpose of these statistics and, in the case of Tasmania, over 40 per cent of the value of land, buildings, plant and machinery is derived from a single factory class, namely "XVI—Heat, Light and Power". Since the other States rely for power largely on thermal generation not generally involving such heavy capital outlays as hydro-electric construction, the results of this particular comparison are not unexpected.

Size Classification of Factories

The size classification of factories is based on the average number of persons employed during the period of operation and includes working proprietors. The following table has been compiled to show size changes in the structure of Tasmanian industry since 1928-29.

Number of Factories and Persons Employed by Size of Factory

Year	Size of Factory (i.e. Average Employment)							
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	101 & over	Total
NUMBER OF FACTORIES								
1928-29 ..	187	96	305	112	49	22	14	785
1938-39 ..	256	114	362	110	71	17	14	944
1948-49 ..	478	142	390	162	106	43	25	1,346
1958-59 ..	736	151	400	174	126	46	33	1,666
1963-64 ..	751	155	414	198	140	44	44	1,746
PERSONS EMPLOYED (a)								
1928-29 ..	430	384	2,091	1,632	1,558	1,492	3,984	11,571
1938-39 ..	582	456	2,422	1,569	2,252	1,155	6,231	14,667
1948-49 ..	1,062	568	2,633	2,344	3,308	3,033	10,549	23,497
1958-59 ..	1,447	604	2,755	2,589	3,869	3,298	14,278	28,840
1963-64 ..	1,448	620	2,922	2,872	4,560	3,132	16,684	32,238

(a) The average number of persons employed as shown in the above table (32,238 in 1963-64) differs from the average number of persons employed shown in all other tables (31,833 in 1963-64) because the average number of persons employed over the period of operation used for size classification exceeds average employment over the whole year.

The change in the size structure of Tasmanian factories since 1928-29 is summarised in the next table:

Change in Average Number of Persons Employed According to Size of Factory, 1928-29 to 1963-64

Particulars	Size of Factory (i.e. Average Employment)							
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	101 and over	Persons
Increase—								
Number Employed ..	1,018	236	831	1,240	3,002	1,640	12,700	20,667
Percent of Total Increase	4.9	1.1	4.1	6.0	14.5	7.9	61.5	100.0

As indicated in the previous table, the main characteristic of the period under review (1928-29 to 1963-64) has been the marked increase in employment in the largest establishments employing 101 hands and over.

The apparent disproportionate increase in the number of factories employing less than four hands can be misleading. The increase is thought to be due largely to definitional factors; establishments with less than four hands are excluded if using only manual power but included if using other types of power. Thus, over the years, the greater use of fractional horsepower electric

motors would have progressively qualified more and more small establishments as "statistical factories". (A two-man bakery mixing by hand is excluded; using a powered mixer, it is included.)

The next table has been compiled to indicate in which classes of industry the largest establishments occur.

**Factories—Classification According to Number
of Persons Employed in Each Industry Class, 1963-64**

Class of Industry	Number of Factories Employing on the Average—				
	20 or under	21 to 50	51 to 100	101 and over	Total
I. Treatment of Non-Metalliferous Mine and Quarry Products	51	5	..	2	58
II. Bricks, Pottery, Glass, &c.	11	7	1	..	19
III. Chemicals, Dyes, &c.	25	1	..	2	28
IV. Industrial Metals, Machines, &c. ..	533	54	18	13	618
V. Precious Metals, Jewellery, Plate ..	19	..	..	..	19
VI. Textiles and Textile Goods (not Dress)	10	1	2	7	20
VII. Skins and Leather (not Clothing or Footwear)	4	1	..	..	5
VIII. Clothing (except Knitted)	82	2	3	..	87
IX. Food, Drink and Tobacco	243	27	7	8	285
X. Sawmills, Joinery, Boxes, &c.	401	27	7	5	440
XI. Furniture, Bedding, &c.	66	4	..	..	70
XII. Paper, Stationery, Printing, Binding, &c.	29	6	4	7	46
XIII. Rubber	20	..	..	..	20
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	13	1	..	..	14
Total Classes I to XV	1,507	136	42	44	1,729
XVI. Heat, Light and Power	11	4	2	..	17
Total All Classes	1,518	140	44	44	1,746

It will be seen that the largest establishments (101 hands and over) occur, with descending order of frequency, in IV, industrial metals, &c.; IX, food processing, &c.; XII, paper-making, &c.; VI, the textile group and X, sawmilling, &c. As a later table will indicate, nearly 90 per cent of all factory employment is concentrated in these five classes.

Factories in Statistical Divisions

A general indication of the geographical distribution of factories is given in the following table, the analysis dealing with factory Classes I to XV inclusive. In Tasmania, factory Class XVI, "Heat, Light and Power", constitutes something of a problem in any geographical distribution because the chief component of the class is the power houses, or "central electric stations" generating electricity for the State Hydro-Electric Commission. To take a specific case, it is theoretically possible for the basic water storage to be in one statistical division, the generating stations in a second division and the point of delivery, through transmission lines, in seven other divisions. Since the output of energy from the stations is integrated into a State-wide grid, the allocation of value of output, value of production, &c. to various statistical divisions would merely confuse the issue; accordingly, Class XVI, "Heat, Light and Power", is not dissected according to area and is completely excluded from the table.

Factories: Principal Items by Statistical Divisions and Selected Areas, 1963-64 (a)
Classes I-XV Only

Particulars	Factories (No.)	Employment (No.)	Salaries and Wages Paid (\$'000)	Value (\$'000) of—			
				Materials Used, Fuel, &c.	Production	Output	Land, Buildings, Plant and Machinery
STATISTICAL DIVISIONS							
South Central ..	465	11,103	25,322	65,294	49,060	114,354	47,658
North Central ..	305	6,838	13,132	29,204	22,584	51,788	20,350
North Western ..	425	7,843	17,606	49,540	37,680	87,220	50,266
North Eastern ..	132	1,862	5,006	17,674	9,514	27,188	40,054
North Midland ..	71	929	1,976	5,518	3,786	9,304	4,502
Midland ..	58	288	532	1,630	1,072	2,702	590
South Eastern ..	61	255	436	864	820	1,684	942
Southern ..	183	1,824	4,174	10,694	10,582	21,276	15,498
Western ..	29	523	1,258	7,152	4,268	11,420	904
Total Classes I-XV ..	1,729	31,465	69,442	187,570	139,366	326,936	180,764
SELECTED AREAS							
Hobart and Suburbs ..	494	11,198	25,462	65,652	49,366	115,018	47,980
Launceston and Suburbs ..	337	7,483	14,504	33,214	25,212	58,426	24,272
Remainder of State ..	898	12,784	29,476	88,704	64,788	153,492	108,512
Total Classes I-XV ..	1,729	31,465	69,442	187,570	139,366	326,936	180,764

(a) Definitions of employment, salaries and wages, materials used, fuel, &c., and value of production have been given in initial summary tables.

As indicated in the previous table, the chief centre of factory activity, measured in terms of value of production, was the South Central Division (Cities of Hobart and Glenorchy); its contribution to total added value was 35 per cent. Major establishments in the Division engaged in zinc and chemical fertiliser production, confectionery making, fruit processing and various types of metalworking and engineering.

Contributing 27 per cent to the total value of production was the N.W. Division, with major industries including paper manufacture, cement production, plywood and building-board making, fruit and vegetable canning and preserving, and some textile making. The North Central Division (City of Launceston) contributed 16 per cent and is the acknowledged textile "capital" of the State. Next came the Southern Division with eight per cent, major establishments engaging in newsprint production and carbide manufacture. With major industries devoted to aluminium and ferro-manganese production, and to food preserving, the N.E. Division contributed seven per cent. The principal industry in the Western Division is the smelting of copper, this Division contributing three per cent.

The previous table shows that Tasmanian factories are not concentrated in the metropolitan area to the extent found in most of the continental States and that a considerable degree of de-centralisation of industry has been achieved.

Factories Classified According to Class of Industry

The following table contains a summary of the principal statistics for factories by class of industry in Tasmania during the year 1963-64:

Principal Items by Class of Industry, 1963-64

Class of Industry	Factories (No.)	Employment (No.)	Salaries and Wages Paid (\$ mill.)	Value (\$ mill.) of—			
				Materials Used, Fuel, &c.	Production	Output	Land, Buildings, Plant and Machinery
I. Treatment of Non-Metalliferous Mine and Quarry Products	58	819	1.94	5.81	4.77	10.58	4.13
II. Bricks, Pottery, Glass, &c.	19	367	0.81	0.83	1.43	2.26	1.64
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	28	943	2.68	7.75	7.15	14.90	9.67
IV. Industrial Metals, Machines, Conveyances	618	10,719	25.50	61.41	49.25	110.66	68.83
V. Precious Metals, Jewellery, Plate	19	45	0.07	0.04	0.13	0.17	0.17
VI. Textiles and Textile Goods (Not Dress)	20	3,426	6.16	18.20	10.50	28.70	10.17
VII. Skins and Leather (not Clothing or Footwear)	5	47	0.10	0.65	0.16	0.81	0.12
VIII. Clothing (except Knitted)	87	710	0.98	0.96	1.82	2.78	2.53
IX. Food, Drink and Tobacco	285	5,053	10.17	46.08	22.47	68.55	31.18
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	440	3,886	7.66	18.72	13.58	32.30	10.59
XI. Furniture of Wood, Bedding, &c.	70	527	0.84	1.77	1.47	3.24	1.22
XII. Paper, Stationery, Printing, Bookbinding, &c.	46	4,683	12.10	24.69	25.72	50.41	39.05
XIII. Rubber	20	129	0.25	0.54	0.64	1.18	1.15
XIV. Musical Instruments	14	111	0.18	0.12	0.27	0.39	0.31
XV. Miscellaneous Products	14	111	0.18	0.12	0.27	0.39	0.31
Total Classes I to XV	1,729	31,465	69.44	187.57	139.36	326.93	180.76
XVI. Heat, Light and Power	17	368	1.14	0.92	13.21	14.13	129.29
Total All Classes	1,746	31,833	70.58	188.49	152.57	341.06	310.05

The next table shows the change in the number of factories in Tasmania during recent years:

Number of Factories in Each Class of Industry

Class of Industry	1954-55	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	55	50	52	48	51	58
II. Bricks, Pottery, Glass, &c.	18	19	18	18	19	19
III. Chemicals, Dyes, &c.	24	26	27	29	29	28
IV. Industrial Metals, Machines, &c.	446	532	599	602	602	618
V. Precious Metals, Jewellery, Plate	6	6	20	19	19	19
VI. Textiles and Textile Goods (not Dress)	13	18	19	19	19	20
VII. Skins and Leather (not Clothing or Footwear)	8	8	8	7	6	5
VIII. Clothing (except Knitted)	72	100	94	95	97	87
IX. Food, Drink and Tobacco	308	287	295	293	298	285
X. Sawmills, Joinery, Boxes, &c.	487	482	473	468	458	440
XI. Furniture, Bedding, &c.	84	65	69	67	69	70
XII. Paper, Stationery, Printing, Binding, &c.	33	39	42	41	43	46
XIII. Rubber	18	22	22	22	22	20
XIV. Musical Instruments, &c.	14	15	14	16	16	14
XV. Miscellaneous Products	14	15	14	16	16	14
Total Classes I to XV	1,586	1,669	1,752	1,744	1,748	1,729
XVI. Heat, Light and Power	11	14	14	16	16	17
Total All Classes	1,597	1,683	1,766	1,760	1,764	1,746

The largest contributor to the total of factory employment is factory Class IV—"Industrial Metals, Machines and Conveyances"—with 34 per cent; the most important sub-class within Class IV is "Extracting and Refining of other Metals (excluding iron and steel)." The next largest contributors are factory Class XII—"Paper, Stationery, Printing, Bookbinding, &c."—with 15 per cent, mostly employed in the manufacture of paper and newsprint; Class IX, food processing, &c., 16 per cent; Class X, sawmilling, &c., 12 per cent; and Class VI, textiles, &c., 11 per cent.

The total value of production (i.e. value added) in 1963-64 was \$152,570,000. The major contributors to this total were Class IV, the metals group, with 32 per cent; Class XII, the paper group, with 17 per cent; Class IX, the food processing group, with 15 per cent; Class X, the sawmilling group, with nine per cent.

Employment in Factories

All persons employed in the manufacturing activities of a factory, including proprietors working in their own business and persons working regularly at home are counted as factory workers while those engaged in selling and distributing, such as salesmen, travellers and carters employed solely in *outward* delivery of manufactured goods, are excluded. The grouping of occupations comprises: (i) working proprietors; (ii) managerial and clerical staff including salaried managers and working directors; (iii) chemists, draftsmen, and other laboratory and research staff; (iv) workers in factories (skilled and unskilled); foremen and overseers; carters (excluding outward delivery only), messengers, and persons working regularly at home.

The figures showing average employment in factories represent the equivalent average number of persons employed, including working proprietors, over a full year.

The next table shows average whole-year employment in Tasmanian factories according to class of industry for a five-year period:

Employment—Total Number of Workers According to Class of Industry

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	737	743	737	813	819
II. Bricks, Pottery, Glass, &c.	392	412	389	382	367
III. Chemicals, Dyes, &c.	840	870	910	926	943
IV. Industrial Metals, Machines, &c.	9,751	10,030	9,989	10,335	10,719
V. Precious Metals, Jewellery, Plate	20	38	40	43	45
VI. Textiles and Textile Goods (not Dress)	3,166	3,261	3,123	3,213	3,426
VII. Skins and Leather (not Clothing or Footwear)	61	67	63	61	47
VIII. Clothing (except Knitted)	878	838	831	716	710
IX. Food, Drink, and Tobacco	4,684	4,711	5,000	5,088	5,053
X. Sawmills, Joinery, Boxes, &c.	3,774	3,818	3,634	3,665	3,886
XI. Furniture, Bedding, &c.	470	409	438	476	527
XII. Paper, Stationery, Printing, Binding, &c.	4,229	4,301	4,258	4,419	4,683
XIII. Rubber	142	126	140	132	129
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	183	166	139	120	111
Total Classes I to XV	29,327	29,790	29,691	30,389	31,465
XVI. Heat, Light and Power	335	368	379	366	368
Total All Classes	29,662	30,158	30,070	30,755	31,833

The factory classes associated with the greatest employment are IV, industrial metals, &c., with 34 per cent in 1963-64; IX, food processing, &c., with 16 per cent; XII, paper-making, &c., with 15 per cent; X, saw-milling, &c., with 12 per cent; VI, the textile group, with 11 per cent. Nearly 90 per cent of Tasmanian factory employment is concentrated in these five classes and it is also in these classes that the largest establishments are found.

The following table shows the number of males and females employed in factories according to occupational groups.

Employment—Occupational Grouping in Factories by Sex

Year	Working Proprietors		Salaried Staff				Wages Staff (c)		Total Workers			Masculinity of Factory Workers (d)
			Managerial &c. (a)		Technical (b)							
	Males	Fe-Males	Males	Fe-Males	Males	Fe-Males	Males	Fe-Males	Males	Fe-Males	Persons	
1954-55 ..	955	39	1,695	753	366	42	18,029	3,573	21,045	4,407	25,452	478
1959-60 ..	936	62	2,137	1,006	522	83	20,813	4,103	24,408	5,254	29,662	465
1960-61 ..	979	46	2,120	1,043	516	109	21,196	4,149	24,811	5,347	30,158	464
1961-62 ..	976	39	2,232	1,082	536	102	20,998	4,105	24,742	5,328	30,070	464
1962-63 ..	1,019	61	2,283	1,124	572	102	21,579	4,015	25,453	5,302	30,755	480
1963-64 ..	930	71	2,434	1,146	512	110	22,345	4,285	26,221	5,612	31,833	467
1964-65 ..	976	80	2,482	1,211	536	116	22,774	4,405	26,768	5,812	32,580	461

- (a) Managerial and clerical staff, including salaried managers and working directors.
 (b) Chemists, draftsmen and other laboratory and research staff.
 (c) Foremen, overseers, workers in factories (skilled and unskilled), carters (excluding outward delivery only), messengers and persons working regularly at home.
 (d) Number of males per 100 females.

The following table shows the age distribution of factory workers as at the last pay-day in June; the figures exclude working proprietors:

**Distribution of Employees According to Age
(Excluding Working Proprietors)**

Year	Number of Persons on Factory Payrolls on last Pay-day in June—							
	Males				Females			
	Under 16 years	16 and under 21 years	21 years and over	Total	Under 16 years	16 and under 21 years	21 years and over	Total
1955..	121	2,296	17,679	20,096	76	1,313	3,379	4,768
1960..	91	2,767	20,628	23,486	88	1,448	4,008	5,544
1961..	129	2,695	20,659	23,483	95	1,377	3,826	5,298
1962..	91	2,858	20,917	23,866	101	1,395	4,230	5,726
1963..	95	2,977	21,442	24,514	69	1,400	3,770	5,239
1964..	123	3,329	21,940	25,392	96	1,587	4,218	5,901
1965..	121	3,441	22,253	25,815	107	1,672	4,166	5,945

It will be observed that the proportion of factory workers under 16 years is extremely low, a reflection of the 16 year minimum compulsory leaving age operative in Tasmanian schools (the "under 16" workers shown are not breaking the law since a system of exemption allows limited departure from the legal minimum age).

The next table has been compiled to show the classes of industry in which female workers predominate:

Employment by Sex in Each Class of Industry, 1963-64

Class of Industry	Average Employment (Whole Year) including Working Proprietors					
	Number			Percentage in Each Class		
	Males	Females	Persons	Males	Females	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products	777	42	819	2.96	0.75	2.57
II. Bricks, Pottery, Glass, &c. ..	351	16	367	1.34	0.29	1.15
III. Chemicals, Dyes, &c. ..	887	56	943	3.38	1.00	2.96
IV. Industrial Metals, Machines, &c.	10,125	594	10,719	38.61	10.58	33.67
V. Precious Metals, Jewellery, Plate.. .. .	42	3	45	0.16	0.05	0.14
VI. Textiles and Textile Goods (Not Dress)	1,565	1,861	3,426	5.97	33.16	10.76
VII. Skins and Leather (not Clothing or Footwear) ..	44	3	47	0.17	0.05	0.15
VIII. Clothing (except Knitted)..	305	405	710	1.16	7.22	2.23
IX. Food, Drink and Tobacco	3,473	1,580	5,053	13.25	28.15	15.87
X. Sawmills, Joinery, Boxes &c.	3,745	141	3,886	14.28	2.51	12.21
XI. Furniture, Bedding, &c. ..	452	75	527	1.72	1.34	1.66
XII. Paper, Stationery, Printing, Binding, &c.	3,885	798	4,683	14.82	14.22	14.71
XIII. Rubber	116	13	129	0.44	0.23	0.41
XIV. Musical Instruments, &c...	..	..	..	..	..	..
XV. Miscellaneous Products ..	88	23	111	0.34	0.41	0.35
Total Classes I to XV	25,855	5,610	31,465	98.60	99.96	98.84
XVI. Heat, Light and Power ..	366	2	368	1.40	0.04	1.16
Total All Classes ..	26,221	5,612	31,833	100.00	100.00	100.00

As demonstrated in the above table, there is a considerable difference in the patterns of male and female employment. Four factory classes account for over 86 per cent of all female workers; in descending order of magnitude, these classes are the textiles group, the food processing group, the paper making group and the industrial metals group. The four factory classes accounting for most male employment (81 per cent) are, in descending order: the industrial metals group, the paper making group, the sawmilling group and the food processing group.

Salaries, Wages and Other Costs

The table that follows has been compiled to show male and female earnings and also to show separately the amounts paid to "managerial and clerical staff, including salaried managers and working directors, chemists, draftsmen and other laboratory and research staff".

**Salaries and Wages in Factories (a), 1963-64
(\$'000)**

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, &c.		All Other Employees		Total		
	Males	Fe- males	Males	Fe- males	Males	Fe- males	Persons
I. Treatment of Non-Metalliferous Mine and Quarry Products	308	43	1,579	11	1,887	54	1,941
II. Bricks, Pottery, Glass, &c.	76	18	715	1	791	19	810
III. Chemicals, Dyes, &c.	577	81	2,011	11	2,588	92	2,680
IV. Industrial Metals, Machines, &c.	4,222	564	20,456	272	24,678	836	25,514
V. Precious Metals, Jewellery, Plate	13	3	50	..	63	3	66
VI. Textiles and Textile Goods (not Dress).. .. .	625	250	2,854	2,428	3,479	2,678	6,157
VII. Skins and Leather (Not Clothing or Footwear).. .. .	20	1	78	1	98	2	100
VIII. Clothing (except Knitted)	72	28	468	407	540	435	975
IX. Food, Drink and Tobacco	1,783	491	6,324	1,576	8,107	2,067	10,174
X. Sawmills, Joinery, Boxes, &c.	691	79	6,797	92	7,488	171	7,659
XI. Furniture, Bedding, &c.	107	28	656	48	763	76	839
XII. Paper, Stationery, Printing, Binding, &c.	1,838	294	9,160	804	10,998	1,098	12,096
XIII. Rubber	42	12	192	3	234	15	249
XIV. Musical Instruments, &c. .. .. .	..	..	..	..	..	..	..
XV. Miscellaneous Products	27	10	129	16	156	26	182
Total Classes I to XV	10,401	1,902	51,469	5,670	61,870	7,572	69,442
XVI. Heat, Light and Power	98	3	1,039	..	1,137	3	1,140
Total All Classes	10,499	1,905	52,508	5,670	63,007	7,575	70,582

(a) Excludes drawings of working proprietors.

The ranking of factory classes according to salaries and wages paid in 1963-64 was: Class IV, 36 per cent; Class XII, 17 per cent; Class IX, 14 per cent; Class X, 11 per cent; Class VI, nine per cent.

The total amount of wages and salaries paid in Tasmania is shown in summary form with average amounts paid per employee:

Salaries and Wages Paid in Factories (a)

Year	Males		Females		Persons	
	Amount	Per Em- ployee	Amount	Per Em- ployee	Amount	Per Em- ployee
	\$'000	\$	\$'000	\$	\$'000	\$
1954-55	33,472	1,666	4,256	974	37,728	1,454
1959-60	51,236	2,182	6,336	1,220	57,572	2,008
1960-61	53,904	2,262	6,756	1,274	60,660	2,082
1961-62	54,496	2,294	6,944	1,312	61,440	2,114
1962-63	57,834	2,368	7,002	1,336	64,836	2,184
1963-64	63,006	2,492	7,576	1,368	70,582	2,290
1964-65	68,183	2,644	8,332	1,454	76,515	2,427

(a) Excludes drawings of working proprietors.

The item "salaries and wages" is a very substantial cost in some industries, whilst in others it is a relatively minor cost. In 1963-64 for example, salaries and wages in Class XVI amounted to only 8.1 per cent of the value of output; this is hardly an unexpected result since the major industry in the class is hydro-electric power generation. By way of contrast, salaries and wages in Classes II and VIII were over 35 per cent of the value of output, and in Class V they approached 39 per cent.

There is, of course, a tendency for labour costs to shrink in relative importance as mechanisation develops. The relationship between salaries and wages, and other costs is shown in a subsequent section headed "Relation of Costs to Output and Production".

Costs of Manufacture (other than Salaries and Wages)

The next table has been compiled to summarise the various costs which are specified in the factory collection (apart from salaries and wages):

"Statistical" Costs of Manufacture Other Than Wages and Salaries (a)
(£'000)

Particulars	1954-55	1959-60	1960-61	1961-62	1962-63	1963-64
Power, Fuel and Light Used ..	6,004	12,027	12,456	12,702	13,959	15,768
Water Used (Not as Power) ..	110	234	237	274	296	404
Lubricating Oils	139	180	183	163	181	193
Repairs and Replacements ..	4,411	6,963	7,077	7,205	7,140	7,795
Wrappers, Containers, Labels, &c.	5,380	8,432	8,548	9,201	9,210	9,722
Total (Excluding Materials Used)	16,044	27,836	28,501	29,545	30,786	33,882
Materials Used	84,930	119,822	122,508	126,128	139,725	154,613
Total "Statistical" Costs (a)	100,974	147,658	151,009	155,673	170,511	188,495

(a) "Statistical" costs are restricted to those shown in the table and exclude items such as interest, rates and taxes, insurances, depreciation, &c.

As indicated in the above table, the two heaviest costs are those of power, fuel and light, and materials used in the manufacturing process. The following table shows the distribution of these costs and total costs as between the various classes of industry:

"Statistical" Costs of Manufacture in Classes of Industry, 1963-64
(£'000)

Class of Industry	Materials Used	Power, Fuel and Light	Other Costs (a)	Total 'Statistical' Costs
I. Treatment of Non-Metalliferous Mine and Quarry Products	4,437	911	463	5,811
II. Bricks, Pottery, Glass, &c.	351	337	139	827
III. Chemicals, Dyes, &c.	5,438	1,263	1,046	7,747
IV. Industrial Metals, Machines, &c. ..	50,772	7,369	3,267	61,408
V. Precious Metals, Jewellery, Plate ..	32	4	2	38
VI. Textiles and Textile Goods (not Dress)	16,775	530	894	18,199
VII. Skins and Leather (not Clothing or Footwear)	630	10	10	650
VIII. Clothing (except Knitted)	799	79	77	955
IX. Food, Drink and Tobacco	37,127	1,238	7,716	46,081
X. Sawmills, Joinery, Boxes, &c.	16,805	730	1,186	18,721
XI. Furniture, Bedding, &c.	1,693	21	61	1,775
XII. Paper, Stationery, Printing, Binding, &c.	18,902	3,207	2,586	24,695
XIII. Rubber	475	36	33	544
XIV. Musical Instruments, &c. .. ..	..	..	..	..
XV. Miscellaneous Products	102	7	10	119
Total Classes I to XV	154,338	15,742	17,490	187,570
XVI. Heat, Light and Power	275	26	624	925
Total All Classes	154,613	15,768	18,114	188,495

(a) Water (not as power), lubricating oils, repairs and replacements, wrappers, containers, labels, &c

The table below shows the expenditure on power, fuel and light analysed according to type:

Cost of Power, Fuel and Light Used in Factories
('\$000)

Year	Coal	Coke	Wood	Fuel Oil	Electricity	Gas	Other, Including Steam	Total
1954-55 ..	2,072	455	336	750	2,089	73	229	6,004
1959-60 ..	2,726	695	425	1,691	5,724	88	678	12,027
1960-61 ..	2,469	660	212	1,958	6,374	83	700	12,456
1961-62 ..	2,231	741	210	1,883	6,926	85	626	12,702
1962-63 ..	1,962	666	192	2,425	7,953	85	676	13,959
1963-64 ..	1,368	645	158	3,251	9,697	73	576	15,768
1964-65 ..	1,085	578	132	3,634	11,522	76	649	17,676

As suggested by the above table, coal is not being used to the same extent as previously; in 1954-55, 234,000 tons were used, compared with 114,400 tons in 1964-65. By way of contrast, factory fuel oil consumption has increased from 4,875,000 gallons in 1954-55 to 45,982,612 gallons in 1964-65. The present importance of electricity for factories is underlined by the fact that its cost in 1964-65 represented 65 per cent of the total cost of power, fuel and light (in contrast with 1954-55 when it represented only 35 per cent); in the same period, the rated horsepower of electric motors ordinarily in use in factories has increased more than 50 per cent but the major factor in the increased use of electrical power has been in metallurgical refining (electric furnaces and electrolytic recovery).

The next table shows, in summary form, the cost of power, fuel and light used in each class of industry for a five-year period:

Cost of Power, Fuel and Light Used in Each Class of Industry
('\$000)

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	670	665	759	911	911
II. Bricks, Pottery, Glass, &c.	360	339	329	320	337
III. Chemicals, Dyes, &c.	1,027	1,115	1,208	1,062	1,263
IV. Industrial Metals, Machines, &c.	4,293	4,431	4,774	5,772	7,369
V. Precious Metals, Jewellery, Plate	2	3	4	4	4
VI. Textiles and Textile Goods (not Dress)	476	513	484	492	530
VII. Skins and Leather (not Clothing or Footwear)	8	9	10	10	10
VIII. Clothing (except Knitted)	82	82	78	76	79
IX. Food, Drink and Tobacco	1,021	1,093	1,184	1,205	1,238
X. Sawmills, Joinery, Boxes, &c.	642	682	649	681	730
XI. Furniture, Bedding, &c.	14	15	15	18	21
XII. Paper, Stationery, Printing, Binding, &c.	3,350	3,436	3,138	3,337	3,207
XIII. Rubber	42	38	38	38	36
XIV. Musical Instruments, &c.	10	9	7	6	7
XV. Miscellaneous Products	10	9	7	6	7
Total Classes I to XV	11,997	12,430	12,677	13,932	15,742
XVI. Heat, Light and Power	30	26	25	27	26
Total All Classes	12,027	12,456	12,702	13,959	15,768

As indicated in the previous table, the total cost of power, fuel and light has increased \$3,741,000 (31 per cent) in the five-year period to 1963-64, and most of the rise can be accounted for in Class IV, the industrial metals group, where the cost has increased \$3,076,000 (72 per cent increase).

The largest single cost in manufacturing is that of the materials used and the next table shows, in summary form, this cost in each class of industry for a five-year period:

Cost of Materials Used in Each Class of Industry
('\$000)

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	2,470	2,696	2,703	4,038	4,437
II. Bricks, Pottery, Glass, &c.	441	456	467	380	351
III. Chemicals, Dyes, &c.	4,315	4,423	4,671	5,006	5,438
IV. Industrial Metals, Machines, &c.	37,438	38,149	40,121	45,091	50,772
V. Precious Metals, Jewellery, Plate	20	29	23	24	32
VI. Textiles and Textile Goods (not Dress)	11,514	12,386	11,532	13,262	16,775
VII. Skins and Leather (not Clothing or Footwear)	634	650	688	803	630
VIII. Clothing (except Knitted)	855	886	961	788	799
IX. Food, Drink and Tobacco	30,553	30,248	33,984	35,567	37,127
X. Sawmills, Joinery, Boxes, &c.	14,194	14,186	13,999	15,738	16,805
XI. Furniture, Bedding, &c.	1,199	1,218	1,254	1,277	1,693
XII. Paper, Stationery, Printing, Binding, &c.	15,305	16,355	14,953	16,877	18,902
XIII. Rubber	390	389	394	473	475
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	178	148	109	115	102
Total Classes I to XV	119,506	122,219	125,859	139,439	154,338
XVI. Heat, Light and Power	316	289	269	286	275
Total All Classes	119,822	122,508	126,128	139,725	154,613

The total cost of materials used in manufacturing has risen \$34,791,000 (29 per cent) in the five-year period to 1963-64.

Value of Output and Value of Production

Value of factory output by classes of industry for a five-year period is shown in the following table:

Value of Factory Output
(\$ million)

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	6.30	6.91	7.46	10.03	10.58
II. Bricks, Pottery, Glass, &c.	2.27	2.33	2.30	2.19	2.26
III. Chemicals, Dyes, &c.	11.26	11.62	12.56	12.16	14.90
IV. Industrial Metals, Machines, &c.	82.91	85.51	87.96	100.76	110.66
V. Precious Metals, Jewellery, Plate	0.07	0.15	0.13	0.14	0.17
VI. Textiles and Textile Goods (not Dress)	21.21	23.72	22.00	24.58	28.70
VII. Skins and Leather (not Clothing or Footwear)	0.89	0.91	0.95	1.02	0.81
VIII. Clothing (except Knitted)	2.73	2.75	2.86	2.72	2.78
IX. Food, Drink and Tobacco	55.06	55.52	63.25	65.42	68.55
X. Sawmills, Joinery, Boxes, &c.	28.93	28.23	27.48	29.69	32.30
XI. Furniture, Bedding, &c.	2.54	2.43	2.44	2.59	3.24
XII. Paper, Stationery, Printing, Binding, &c.	43.45	44.86	41.46	46.83	50.41
XIII. Rubber	1.07	0.95	1.01	1.08	1.18
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.61	0.49	0.42	0.43	0.39
Total Classes I to XV	259.30	266.38	272.28	299.64	326.93
XVI. Heat, Light and Power	8.75	9.52	11.27	12.91	14.13
Total All Classes	268.05	275.90	283.55	312.55	341.06

In the section dealing with the definitions used in factory statistics, it was indicated that value of output is not a satisfactory indicator for making year-to-year comparisons or for making comparisons between classes of industry. To the extent that the finished article from one industry may become a material for use in the manufacturing process of another industry, values of output are likely to be inflated by "double-counting". Cardboard boxes and containers, for example, are a finished product of Class XII but they may be used to pack the products of industries in most other classes; similarly, electric power is a final output from Class XVI but is also taken into all other industry classes as a cost of production. For these and other considerations, the better measure for purposes of comparison is undoubtedly value of production, (i.e. value of output less "statistical costs" but with no deduction of wages and salaries).

The next table shows the value of production in Tasmanian factories for a five-year period:

Value of Factory Production
(\$ million)

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	2.65	3.01	3.51	4.54	4.77
II. Bricks, Pottery, Glass, &c.	1.27	1.38	1.37	1.36	1.43
III. Chemicals, Dyes, &c.	5.00	5.19	5.88	5.18	7.15
IV. Industrial Metals, Machines, &c.	37.99	39.74	39.49	46.72	49.25
V. Precious Metals, Jewellery, Plate	0.05	0.12	0.10	0.12	0.13
VI. Textiles and Textile Goods (not Dress)	8.54	9.98	9.24	9.99	10.50
VII. Skins and Leather (not Clothing or Footwear)	0.24	0.24	0.24	0.20	0.16
VIII. Clothing (except Knitted)	1.73	1.73	1.78	1.79	1.82
IX. Food, Drink and Tobacco	17.06	17.60	20.32	21.26	22.47
X. Sawmills, Joinery, Boxes, &c.	13.08	12.35	11.90	12.26	13.58
XI. Furniture, Bedding, &c.	1.31	1.18	1.15	1.28	1.47
XII. Paper, Stationery, Printing, Binding, &c.	22.54	22.83	21.56	24.35	25.72
XIII. Rubber	0.61	0.49	0.54	0.54	0.64
XIV. Musical Instruments, &c. .. ..	.. ..	.. ..	.. ..	.. ..	.. ..
XV. Miscellaneous Products	0.40	0.33	0.29	0.30	0.27
Total Classes I to XV	112.47	116.17	117.37	129.89	139.36
XVI. Heat, Light and Power	7.92	8.72	10.50	12.14	13.21
Total All Classes	120.39	124.89	127.87	142.03	152.57

The value of production for all factories has risen by 27 per cent in the period 1959-60 to 1963-64. Corresponding percentage increases in "added value" for individual classes of industry are: Class IV, industrial metals, &c., 30 per cent; Class VI, textiles, &c., 23 per cent; Class IX, food processing, &c., 32 per cent; Class XII, paper making, &c., 14 per cent; Class XVI, heat, light and power, 67 per cent.

The class of industry showing the greatest percentage increase was Class I, treatment of non-metalliferous mine and quarry products, 80 per cent.

Relation of Costs to Output and Production

The costs data collected from factories are not complete but cover major items such as materials used; power, fuel and light; lubricants, water and containers, &c. The following table summarises these costs for each class of

industry and gives the balance remaining after such costs, together with salaries and wages, have been deducted from the value of output. The balance so obtained for each industry is the fund available to provide for all other costs and overhead expenses such as rent, interest, insurance, pay-roll tax, income tax, depreciation, &c., as well as drawings by working proprietors and profit.

Factory Costs, Output and Residual Balance, 1963-64
(\$'000)

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs (b)	Value of Output
	Materials Used	Other "Statistical" Costs (a)	Salaries and Wages		
I. Treatment of Non-Metalliferous Mine and Quarry Products	4,437	1,374	1,941	2,832	10,584
II. Bricks, Pottery, Glass, &c.	351	476	810	624	2,261
III. Chemicals, Dyes, &c.	5,438	2,309	2,680	4,469	14,896
IV. Industrial Metals, Machines, &c. ..	50,772	10,636	25,514	23,735	110,657
V. Precious Metals, Jewellery, Plate ..	32	6	66	66	170
VI. Textiles and Textile Goods (not Dress)	16,775	1,424	6,157	4,342	28,698
VII. Skins and Leather (not Clothing or Footwear)	630	20	100	56	806
VIII. Clothing (except Knitted)	799	156	975	851	2,781
IX. Food, Drink and Tobacco	37,127	8,954	10,174	12,295	68,550
X. Sawmills, Joinery, Boxes, &c.	16,805	1,916	7,659	5,924	32,304
XI. Furniture, Bedding, &c.	1,693	82	839	629	3,243
XII. Paper, Stationery, Printing, Binding, &c.	18,902	5,793	12,096	13,621	50,412
XIII. Rubber	475	69	249	388	1,181
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	102	17	182	92	393
Total Classes I to XV	154,338	33,232	69,442	69,924	326,936
XVI. Heat, Light and Power	275	650	1,140	12,064	14,129
Total All Classes	154,613	33,882	70,582	81,988	341,065

(a) Power, fuel, light, water, lubricating oil, repairs and replacements, wrappers, containers, labels, &c.

(b) Balance available for costs and charges not specified on the factory form and for profit (including drawings by working proprietors).

There are considerable variations in the proportions which the cost of materials and the expenditure on wages bear to the value of output in the various classes of industry. These are, of course, due to the difference in treatment required to convert the materials to their final form. Class XVI, heat, light and power, obviously constitutes a major deviation from all other classes of industry; the major component in this class is hydro-electric power production characterised by heavy capital expenditure and extremely light operational costs since the basic "raw material" is water. The comparatively large residual balance attributable to Class XVI is required to meet a heavy burden in interest and depreciation charges associated with the substantial outlay of capital which created the water storages and generating capacity.

In the following table, the previous data on costs and residual balances have been converted to percentages of the value of output for each class of industry:

**Factory Costs and Residual Balance as Proportion of Value of Output, 1963-64
(Per Cent)**

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs	Value of Output
	Materials Used	Other "Statistical" Costs	Salaries and Wages		
I. Treatment of Non-Metalliferous Mine and Quarry Products	41.9	13.0	18.3	26.8	100.0
II. Bricks, Pottery, Glass, &c.	15.5	21.1	35.8	27.6	100.0
III. Chemicals, Dyes, &c.	36.5	15.5	18.0	30.0	100.0
IV. Industrial Metals, Machines, &c.	45.9	9.6	23.1	21.4	100.0
V. Precious Metals, Jewellery, Plate	18.9	3.5	38.8	38.8	100.0
VI. Textiles and Textile Goods (not Dress)	58.5	4.9	21.5	15.1	100.0
VII. Skins and Leather (not Clothing or Footwear)	78.2	2.5	12.4	6.9	100.0
VIII. Clothing (except Knitted)	28.7	5.6	35.1	30.6	100.0
IX. Food, Drink and Tobacco	54.2	13.1	14.8	17.9	100.0
X. Sawmills, Joinery, Boxes, &c.	52.1	5.9	23.7	18.3	100.0
XI. Furniture, Bedding, &c.	52.2	2.5	25.9	19.4	100.0
XII. Paper, Stationery, Printing, Binding, &c.	37.5	11.5	24.0	27.0	100.0
XIII. Rubber	40.2	5.8	21.1	32.9	100.0
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	26.0	4.3	46.3	23.4	100.0
Total Classes I to XV	47.2	10.2	21.2	21.4	100.0
XVI. Heat, Light and Power	1.9	4.6	8.1	85.4	100.0
Total All Classes	45.4	9.9	20.7	24.0	100.0

The next table has been compiled to summarise total specified costs of production, residual balances and value of output:

Total Factory Costs, Output and Residual Balance

Year	Specified Costs of Production			Balance between Value of Output and Specified Costs (b)	Value of Output
	Materials Used	Other "Statistical" Costs (a)	Salaries and Wages		

VALUE (\$'000)

1959-60	119,822	27,836	57,572	62,820	268,050
1960-61	122,508	28,501	60,660	64,233	275,902
1961-62	126,128	29,545	61,440	66,434	283,547
1962-63	139,725	30,786	64,836	77,198	312,545
1963-64	154,613	33,882	70,582	81,988	341,065
1964-65	175,920	38,379	76,515	90,735	381,549

Total Factory Costs, Output and Residual Balance—continued

Year	Specified Costs of Production			Balance between Value of Output and Specified Costs (b)	Value of Output		
	Materials Used	Other “Statistical” Costs (a)	Salaries and Wages				
PROPORTION OF VALUE OF OUTPUT (PER CENT)							
1959-60	44.7	10.4	21.5	23.4	100.0
1960-61	44.4	10.3	22.0	23.3	100.0
1961-62	44.5	10.4	21.7	23.4	100.0
1962-63	44.7	9.9	20.7	24.7	100.0
1963-64	45.4	9.9	20.7	24.0	100.0
1964-65	46.1	10.1	20.0	23.8	100.0

(a) Power, fuel, light, water, lubricating oils, repairs and replacements, wrappers, containers, labels, &c.

(b) Balance available for costs and charges not specified on the factory form and for profit (including drawings by working proprietors).

Land, Buildings, Plant and Machinery

The values recorded in this section are generally the *values shown in the books* of the individual firms after allowance has been made for depreciation, but they include estimates of the capital value of rented premises and plant. The totals shown in the tables consequently do not represent the actual amount of capital invested in industry and are largely influenced by individual accounting methods and policies in use at a given point in time.

Where land and buildings, &c. and plant and machinery, &c. are rented by occupiers of factories, their capital value has been computed by capitalising the rent paid at fifteen years' and ten years' purchase respectively.

The table that follows shows the value of land and buildings used in connection with the various classes of manufacturing industries for a five-year period. Excluding Class XVI which is a special case because of its coverage of hydro-electric power generation, it will be seen that the value of land and buildings is greatest in Class IV (\$28.95m), Class IX (\$16.58m) and Class XII (\$12.98m). An examination of the value of plant and machinery in a subsequent table shows the same classes as the three most prominent, namely Class IV (\$39.89m), Class XII (\$26.07m) and Class IX, (\$14.60m). Associated with Class IV are major establishments at George Town, Risdon and Mt. Lyell, all concerned with the extraction and refining of metals (aluminium, ferro-manganese alloys, zinc and copper). Included in Class XII are major establishments at Burnie, Boyer and Geeveston, producing paper, newsprint and paper pulp. Class IX includes the northern and southern breweries, a major confectionery factory and a variety of large food-processing establishments. It is an interesting exercise to compare the number of persons employed in each factory class with the value of land, buildings, plant and machinery recorded for each class. For example, Class X employs almost as many persons as Class XII despite the big difference in values of land, plant, &c.

**Value at 30th June of Land and Buildings in Each Class of Industry
(\$ million)**

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	1.40	1.46	1.48	1.57	1.64
II. Bricks, Pottery, Glass, &c.	0.60	0.73	0.77	0.85	1.03
III. Chemicals, Dyes, &c.	2.37	2.65	2.61	2.79	3.01
IV. Industrial Metals, Machines, &c. ..	20.77	22.01	23.69	26.76	28.95
V. Precious Metals, Jewellery, Plate ..	0.05	0.15	0.14	0.14	0.14
VI. Textiles and Textile Goods (not Dress)	2.82	2.89	3.15	3.21	3.52
VII. Skins and Leather (not Clothing or Footwear)	0.07	0.09	0.08	0.08	0.08
VIII. Clothing (except Knitted)	1.57	1.37	1.54	1.60	1.70
IX. Food, Drink and Tobacco	12.06	13.58	14.10	15.13	16.58
X. Sawmills, Joinery, Boxes, &c.	3.45	3.66	3.59	3.97	4.62
XI. Furniture, Bedding, &c.	0.69	0.65	0.77	0.84	0.99
XII. Paper, Stationery, Printing, Binding, &c.	12.05	12.48	12.28	12.96	12.98
XIII. Rubber	0.50	0.58	0.61	0.79	0.87
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.31	0.25	0.29	0.24	0.25
Total Classes I to XV	58.71	62.55	65.10	70.93	76.36
XVI. Heat, Light and Power	85.31	84.55	94.05	92.99	92.04
Total All Classes	144.02	147.10	159.15	163.92	168.40

It will be observed that the value of land and buildings associated with Class XVI, heat, light and power, is greater than the corresponding total value for all other factory classes. The chief component of Class XVI—hydro-electric power generation—has involved the creation of extensive dams, storages and flumes and the book value of such installations is included under “land and buildings”; the actual generating plant, however, is included under “plant and machinery”.

The next table shows the value of plant and machinery in each class of industry for a five-year period:

**Value at 30th June of Plant and Machinery in Each Class of Industry
(\$ million)**

Class of Industry	1959-60	1960-61	1961-62	1962-63	1963-64
I. Treatment of Non-Metalliferous Mine and Quarry Products	1.98	2.55	2.37	2.65	2.49
II. Bricks, Pottery, Glass, &c.	0.51	0.68	0.72	0.61	0.61
III. Chemicals, Dyes, &c.	4.46	4.42	4.08	5.88	6.66
IV. Industrial Metals, Machines, &c. ..	22.49	23.80	28.37	39.09	39.89
V. Precious Metals, Jewellery, Plate ..	0.02	0.03	0.03	0.03	0.03
VI. Textiles and Textile Goods (not Dress)	4.53	4.74	5.28	5.27	6.65
VII. Skins and Leather (not Clothing or Footwear)	0.03	0.05	0.05	0.05	0.04
VIII. Clothing (except Knitted)	0.73	0.74	0.72	0.78	0.82
IX. Food, Drink and Tobacco	10.51	11.78	12.77	13.75	14.60
X. Sawmills, Joinery, Boxes, &c.	5.46	4.91	4.66	4.54	5.97
XI. Furniture, Bedding, &c.	0.15	0.15	0.15	0.22	0.23
XII. Paper, Stationery, Printing, Binding, &c.	20.39	22.65	24.11	27.00	26.07
XIII. Rubber	0.25	0.28	0.25	0.26	0.28
XIV. Musical Instruments, &c. .. ..	..	..	..	..	..
XV. Miscellaneous Products	0.08	0.07	0.07	0.06	0.06
Total Classes I to XV	71.59	76.85	83.63	100.19	104.40
XVI. Heat, Light and Power	35.72	35.78	37.96	37.74	37.25
Total All Classes	107.31	112.63	121.59	137.93	141.65

Additions, Replacements and Depreciation Allowed

In stating the current book value of land and buildings and of plant and machinery, each factory proprietor is required to complete a reconciliation along the following lines:

	Land and Buildings	Plant and Machinery
	\$	\$
(i) Book value at beginning of year ..		
Plus (ii) Additions and replacements during year ..		
Less (iii) Depreciation allowed during year ..		
Less (iv) Sales and losses by fire, &c., during year ..		
(±) (v) Adjustment due to revaluation ..		
(vi) Book value at end of year ..		

If no proprietors used rented land and buildings or rented plant and machinery, then the totals for the items "additions and replacements" and "depreciation allowed" would give a complete record of these important capital items in the factory sector. However, factory proprietors who rent premises or plant are simply required to report the annual rental and, to this extent, the totals for additions and replacements, and depreciation allowed, are incomplete since they refer only to land, buildings, plant and machinery owned by the factory proprietor. In 1963-64, nine per cent of the value of land and buildings comprised rentals capitalised at 15 years' purchase and two and a half per cent of the value of plant and machinery comprised rentals capitalised at 10 years' purchase. The following table summarises additions and replacements and depreciation allowed:

Factories—Reported Additions, Replacements and Depreciation Allowed
(\$ million)

Year	Land and Buildings			Plant and Machinery		
	Additions and Replacements (Excluding Rented)	Depreciation (Excluding Rented)	Book Value, 30th June (Including Rented)	Additions and Replacements (Excluding Rented)	Depreciation (Excluding Rented)	Book Value, 30th June (Including Rented)
1954-55 ..	5.47	0.71	59.20	9.40	3.98	59.76
1955-56 ..	28.34	1.08	93.16	16.68	5.18	80.85
1956-57 ..	19.16	0.93	112.95	16.03	5.55	89.67
1957-58 ..	3.54	1.52	118.91	10.61	6.51	93.72
1958-59 ..	4.53	1.66	123.66	8.70	7.19	96.45
1959-60 ..	21.05	1.77	144.02	17.39	7.70	107.31
1960-61 ..	4.33	1.83	147.10	13.69	8.50	112.63
1961-62 ..	13.93	1.86	159.15	19.16	9.01	121.59
1962-63 ..	4.92	1.91	163.92	24.60	10.19	137.93
1963-64 ..	4.77	2.16	168.40	15.04	11.65	141.65
1964-65 ..	41.35	2.22	209.01	24.62	11.78	155.34

Power Equipment in Factories

General

Since 1936-37, statistics of power equipment in factories relate to the "rated horsepower" of engines ordinarily in use and engines in reserve or idle, omitting obsolete engines. In addition, particulars of the power equipment of central electric stations are collected in greater detail. Since the central electric stations supply part of their power output to factories and since they are themselves classified as factories, it is necessary to make a clear distinction between engines in the stations and engines in all other types of factory, otherwise duplication may occur. In the following tables, central electric stations have been treated separately from other factories.

Rated Horse-power of Engines in Factories Other Than Central Electric Stations

The following table shows the types of engines and motors employed in each class of industry, also the horsepower rating related to each type:

**Factories, Excluding Central Electric Stations—
Types and Power Rating of Engines in Each Class of Industry, 1963-64**

Class of Industry	Rated Horsepower of Engines and Motors Ordinarily in Use—				Rated H.P. of Engines in Reserve or Idle (excluding Obsolete Engines)
	Steam	Internal Combustion	Motors Driven by Purchased Electricity	Total (b)	
I. Treatment of Non-Metalliferous Mine and Quarry Products ..	..	211	21,081	21,292	1,290
II. Bricks, Pottery, Glass, &c. ..	..	137	3,204	3,341	1,153
III. Chemicals, Dyes, &c. ..	15	157	17,028	17,200	3,406
IV. Industrial Metals, Machines, &c. ..	..	662	67,001	67,663	15,235
V. Precious Metals, Jewellery, Plate ..	6	..	90	96	3
VI. Textiles and Textile Goods (not Dress) ..	..	..	10,350	10,350	1,190
VII. Skins and Leather (not Clothing or Footwear ..	..	..	507	507	26
VIII. Clothing (except Knitted) ..	3	1	808	812	67
IX. Food, Drink and Tobacco ..	114	851	27,608	28,573	2,846
X. Sawmills, Joinery, Boxes, &c. ..	463	9,728	43,093	53,284	2,349
XI. Furniture, Bedding, &c. ..	..	..	1,589	1,589	12
XII. Paper, Stationery, Printing, Binding, &c. ..	..	..	109,113	109,113	19,118
XIII. Rubber ..	5	..	505	510	48
XIV. Musical Instruments, &c. ..	..	..	..	..	..
XV. Miscellaneous Products ..	..	..	230	230	32
Total Classes I to XV ..	606	11,747	302,207	314,560	46,775
XVI. Heat, Light and Power (a)	6	..	70	76	55
Total All Classes (a) ..	612	11,747	302,277	314,636	46,830

(a) Engines and motors in central electric stations excluded.

(b) Excludes motors driven by electricity of own generation.

The total rated horsepower of engines and motors ordinarily in use in the previous table is free from duplication since electric motors driven by power from a factory's own generation are excluded. The same freedom from duplication is not possible in relation to the power rating of reserve engines and motors, the figures shown being simply unadjusted totals of reported capacity. In 1964-65, motors ordinarily in use and driven by electricity were rated at 308,521 horsepower using purchased electricity and only 280 horsepower using electricity of own generation. As indicated by the previous table, the class with the greatest horsepower rating of electric motors is Class XII, paper making, &c. This does not necessarily imply that Class XII uses most electricity since power is employed industrially for purposes other than the driving of machinery, e.g. for electrolytic processes. In actual fact, Class IV, industrial metals, &c. consumes more electricity than Class XII.

The table that follows summarises the types and power capacity of engines and motors in Tasmanian factories over a ten-year period:

**Factories, Excluding Central Electric Stations—
Types and Power Rating of Engines**

Year	Rated Horsepower of Engines and Motors Ordinarily in Use								Rated H.P. of Engines in Reserve or Idle (Excluding Obsolete Engines) (<i>b</i>)
	Steam		Internal Combustion		Water	Motors Driven by Electricity		Total without Duplication (<i>a</i>)	
	Reciprocating	Tur-bine	Light Oils	Heavy Oils		Purch-ased	Own Generation		
1954-55 ..	1,864	11	9,273	809	242	198,406	8	210,606	32,538
1959-60 ..	1,188	21	11,606	135	192	251,960	19	265,103	37,851
1960-61 ..	1,112	21	10,732	130	192	268,019	16	280,207	37,417
1961-62 ..	1,048	21	10,728	173	192	269,580	..	281,743	40,439
1962-63 ..	1,040	..	10,812	692	..	290,198	273	302,742	43,298
1963-64 ..	612	..	11,547	200	..	302,277	281	314,636	46,830
1964-65 ..	547	..	11,797	1,315	..	308,521	280	322,180	47,449

(a) Excludes electric motors driven by power of own generation; includes gas driven engines not specified in table.

(b) Includes all electric motors in reserve.

Central Electric Stations

The generation of hydro-electric power in Tasmania is sufficiently important to warrant detailed treatment in its own right but the Commonwealth uniform definition of factory establishments classifies producers of "electric light and power" as a sub-class of Class XVI, heat, light and power, and therefore a short account of the central electric stations is included at this point. A fuller description will be found in the section, "Hydro-Electric Power", further on in this chapter.

In 1963-64, the horsepower rating (or installed capacity) of generators in the Tasmanian central electric power stations was 1,078,034 horsepower; of this total, 1,077,290 horsepower was associated with turbines driven by water and 744 horsepower with internal combustion engines. The following table summarises the main power characteristics of the central electric stations (with horsepower equivalents for kilowatt measures):

Central Electric Stations—Power Rating Characteristics of Generators

Description	Unit	1959-60	1960-61	1961-62	1962-63	1963-64
Total Installed Capacity ..	kw. hp.	552,494 778,790	580,394 817,790	604,530 851,434	628,530 884,934	767,990 1,078,034
Effective Capacity ..	kw. hp.	547,664 770,990	577,564 812,690	601,700 846,414	625,700 879,914	765,160 1,072,970
Maximum Load	kw. hp.	423,021 587,108	448,518 622,526	467,279 648,621	560,619 778,276	576,604 800,477

In 1963-64, there were 15 establishments classed as central electric stations, 12 government and three "company". The only two establishments using internal combustion engines were located on King and Flinders Islands where the capacity for generation by water-power is almost non-existent. The government-owned stations, apart from an internal combustion unit on King Island, all derived power from water and formed part of an integrated generation, transmission and distribution system serving the whole State. In the continental States, by way of contrast, the predominant method of generating electric power is by the steam turbine although hydro-electric generation is being extended.

Principal Articles Manufactured

The next table lists the principal articles of manufacture in Tasmania, irrespective of the sub-class of industry in which production took place. Due to the limited number of producers, it is not permissible under statute to publish particulars regarding some articles of manufacture which would otherwise appear in the table; this difficulty is accentuated in Tasmania in which, for some articles, there may only be a single producer. To give some indication of changes in production, quantity details are given for 1938-39, 1959-60 and 1963-64, but values are shown only for 1963-64.

Principal Articles Manufactured

Article	Unit of Quantity	Quantity			Value 1963-64 (\$'000)
		1938-39	1959-60	1963-64	
Acid, Sulphuric (100 per cent)	ton	14,158	127,038	158,832	(a)
Aerated Waters	'000 gal.	338	1,838	2,186	1,329
Bacon and Ham	'000 lb.	1,935	1,781	2,612	1,442
Bran and Pollard	short ton	8,939	13,201	11,111	470
Bread (2 lb. loaf equivalents) ..	'000	11,337	27,175	27,850	4,699
Bricks and Blocks, Cement .. ..	..	..	..	..	338
Bricks, Earthenware	'000	14,541	23,975	24,648	1,049
Butter (b)	ton	4,053	11,744	13,667	11,436
Cadmium, Refined	lb.	385,287	567,967	757,452	2,208
Cakes, Pastry, Pies .. ..	..	..	..	..	1,745
Cases, Fruit	'000	3,143	4,081	4,825	1,548
Cheese	ton	1,420	328	1,337	662
Copper, Refined	ton	12,675	11,262	11,790	7,357
Cordials and Syrups	gal.	17,461	205,597	306,529	569
Electricity, Total Generated ..	mill. kwh.	567	2,532	3,414	(a)
Fertilisers—					
Sulphate of Ammonia	ton	..	57,601	42,819	(a)
Superphosphate	ton	30,086	102,613	132,113	(a)
Fibrous Plaster Sheets	sq. yd.	120,678	778,522	782,067	706
Flour	short ton	19,582	30,872	27,412	2,131

Principle Articles Manufactured—continued

Article	Unit of Quantity	Quantity			Value 1963-64 (\$'000)
		1938-39	1959-60	1963-64	
Fruits, Canned or Bottled—					
Apples, Solid Pack	'000 lb.	2,313	16,584	17,251	1,865
Berry Fruits	'000 lb.	918	2,944	1,416	270
Fruit, Dehydrated and Evaporated Apples	'000 lb.	762	558	698	181
Fruit Pulp and Puree	'000 lb.	9,732	6,592	5,139	513
Furniture, Wooden .. ..	..	..	..	..	1,906
Joinery .. ..	..	..	..	..	3,577
Mattresses, Woven Wire	No.	3,386	7,286	5,533	46
Paper, Newsprint	ton	..	88,510	92,039	12,855
Structural Steel Fabricated	ton	(a)	10,154	10,205	2,480
Tallow	'000 lb.	1,694	7,699	7,955	413
Timber (Sawn, Peeled or Sliced)—					
Hardwood (c)	'000 sup. ft.	83,499	164,895	164,946	13,657
Softwood (c)	'000 sup. ft.	1,529	4,764	5,911	660
Dressed Timber—					
Floorboards	'000 sup. ft.	5,124	29,511	29,042	4,668
Weatherboards	'000 sup. ft.	1,911	3,743	2,974	510
Other	'000 sup. ft.	1,165	15,979	21,069	3,537
Tyres Retreaded and Recapped	No.	10,650	81,820	105,352	1,141
Zinc, Refined	ton	69,825	117,893	138,610	(a)

(a) Not available for publication.

(b) Includes butter equivalent of butter oil.

(c) Includes timber to be further processed.

The articles just listed do not include the following important Tasmanian products: aluminium, carbide, cement, confectionery, welding electrodes, ferro-manganese alloys, hand tools, paperpulp and other paper products, titanium di-oxide, woollen manufactures and other textile products. An unusual unlisted product is sodium alginate (a chemical used in ice cream mixes) which requires the harvesting of seaweed for treatment at an East Coast factory.

Individual Industries

In the section that follows, the term "individual industry" is used to denote a specific factory sub-class (for example I-3, "Carbide", is Class I, Treatment of Non-metalliferous Mine and Quarry Products; sub-class 3, the manufacture of carbide).

The items given for each industry are defined as follows:

Rating of Engines and Motors ..	engines and motors driving factory machinery and ordinarily in use.
Average Number of Workers ..	average whole year, including working proprietors.
Salaries and Wages Paid ..	excludes amounts drawn by working proprietors.
Other Costs of Manufacture ..	cost of power, fuel, light, water, lubricating oils, containers, &c., tools replaced, repairs to plant (but not depreciation charges).
Value of Production ..	value of output less "statistical" costs, other than labour, (i.e. less cost of materials and "other costs of manufacture", as just defined).
Value of Land, Machinery, &c.	at 30th June; includes estimated value for rented premises and machinery.

Selected Individual Industries, 1963-64

Particulars	Unit	I-5	II-1	III-4	IV-3	IV-5
		Fibrous Plaster and Products	Bricks and Tiles	White-lead, Paints and Varnishes	Plant, Equipment and Machinery	Extracting and Refining, Non-ferrous Metals (a)
Factories	No.	13	9	3	30	4
Rating of Engines and Motors	HP.	151	2,071	221	2,515	47,453
Average Workers .. .	No.	99	222	17	1,026	3,444
Salaries and Wages Paid ..	\$'000	202	505	39	2,242	10,527
Cost of Materials Used ..	\$'000	422	147	221	2,358	32,892
Other Costs of Manufacture	\$'000	16	320	50	150	9,281
Value of Output	\$'000	859	1,305	502	6,044	66,238
Value of Production .. .	\$'000	421	838	231	3,536	24,065
Value of Land and Buildings	\$'000	171	506	97	2,246	12,652
Value of Plant and Machinery	\$'000	34	460	25	932	33,761

(a) Includes aluminium, cadmium, copper, ferro-manganese alloy and zinc.

Individual Industries, 1963-64 (Continued)

Particulars	Unit	IV-7	IV-10	IV-22	IV-24	IV-26
		Tramcar and Railway Workshops, Government	Motor Vehicle Repairs	Non-Ferrous Founding, Casting, &c.	Sheet Metal Working, Pressing and Stamping	Wire and Wire Working (including Nails)
Factories	No.	4	335	8	30	9
Rating of Engines and Motors	HP.	3,101	2,293	355	793	416
Average Workers .. .	No.	588	1,967	139	320	123
Salaries and Wages Paid ..	\$'000	1,227	3,470	254	595	314
Cost of Materials Used ..	\$'000	407	3,714	261	2,044	1,304
Other Costs of Manufacture	\$'000	70	184	31	78	49
Value of Output	\$'000	1,964	9,593	650	3,571	2,032
Value of Production .. .	\$'000	1,487	5,695	358	1,449	679
Value of Land and Buildings	\$'000	1,386	5,367	135	710	480
Value of Plant and Machinery	\$'000	641	900	92	357	333

Individual Industries, 1963-64 (Continued)

Particulars	Unit	VI-3	VIII-14	IX-1	IX-5	IX-9
		Wool Carding, Spinning, Weaving	Dyeworks and Cleaning	Flour Milling	Bakeries (including Cakes and Pastry)	Confectionery
Factories	No.	4	31	5	141	5
Rating of Engines and Motors	HP.	7,054	559	1,814	1,071	6,550
Average Workers .. .	No.	2,410	280	135	643	1,236
Salaries and Wages Paid ..	\$'000	4,088	444	288	918	2,742
Cost of Materials Used ..	\$'000	10,088	110	2,289	2,920	8,108
Other Costs of Manufacture	\$'000	884	108	162	304	2,364
Value of Output	\$'000	16,936	1,084	3,156	5,908	16,264
Value of Production .. .	\$'000	5,964	866	705	2,684	5,792
Value of Land and Buildings	\$'000	1,658	824	656	2,042	2,278
Value of Plant and Machinery	\$'000	2,946	436	700	1,208	3,992

Individual Industries, 1963-64 (Continued)

Particulars	Unit	IX-10	IX-12	IX-13	IX-14	X-1
		Jam, Fruit and Vegetable Canning	Bacon Curing	Butter Factories	Cheese Factories	Saw- mills
Factories	No.	18	15	12	8	305
Rating of Engines and Motors	HP.	7,391	1,100	2,066	241	42,313
Average Workers	No.	1,313	274	228	36	2,754
Salaries and Wages Paid ..	\$'000	2,470	577	499	90	5,296
Cost of Materials Used ..	\$'000	3,146	3,400	9,403	500	13,379
Other Costs of Manufacture	\$'000	2,670	247	332	68	1,207
Value of Output	\$'000	9,192	4,982	11,499	730	23,952
Value of Production	\$'000	3,376	1,335	1,764	162	9,366
Value of Land and Buildings	\$'000	3,030	859	469	90	2,546
Value of Plant and Machinery	\$'000	2,601	310	706	92	3,449

Individual Industries, 1963-64 (Continued)

Particulars	Unit	X-4	XI-1	XII-9	XIII-2	XVI-1
		Joinery	Cabinet and Furniture Making	Paper Making	Tyre Retread- ing and Repairing	Electric Light and Power, Gov't.
Factories	No.	109	56	4	20	12
Rating of Engines and Motors	HP.	3,859	1,387	106,074	510	1,061,320
Average Workers	No.	601	440	3,373	129	310
Salaries and Wages Paid ..	\$'000	1,211	716	9,227	249	978
Cost of Materials Used ..	\$'000	1,938	1,189	14,906	475	..
Other Costs of Manufacture	\$'000	63	42	5,531	70	598
Value of Output	\$'000	4,034	2,447	41,114	1,182	13,570
Value of Production	\$'000	2,033	1,216	20,677	637	12,972
Value of Land and Buildings	\$'000	872	785	9,829	869	91,848
Value of Plant and Machinery	\$'000	359	180	23,847	280	36,142

Repair Workshops

Earlier a "factory", for the purpose of these statistics, was defined as an establishment in which four or more persons are employed or where power (other than manual) is used in any manufacturing process. The concept of manufacturing is broadened in many fields to include repair work and some sub-classes of the basic classification are specifically reserved for repairing (e.g. IV-10, "Motor Vehicles—Repairs") while others include both construction and repair work (e.g. IV-7, "Construction and Repair, Tramcars and Railway Rolling Stock").

Government Factories

The concept of the factory is not restricted to the private sector of the economy and all factory data previously quoted in this chapter have referred to private and government establishments without distinction. Of the 1,746

factories in the 1963-64 collection, 70 were classified as "government", the term being applied to all levels whether Commonwealth, State, local or semi-government. To give an indication of the various fields of government factory activity, the next table has been compiled showing the number of establishments in the relevant sub-classes:

Number of Government Factories in Sub-Classes, 1963-64

Sub-Class of Industry	Title of Sub-Class	Number of Government Factories
I-4	Lime, Plaster of Paris, Asphalt	2
I-9	Other Cement Goods	3
III-8	Boiling Down, Tallow Refining	1
IV-3	Plant, Equipment and Machinery, including Machine Tools ..	14
IV-4	Other Engineering	4
IV-6	Electrical Machinery, Cables and Apparatus	1
IV-7	Construction and Repair, Tramcars and Railway Rolling Stock	4
IV-10	Motor Vehicles—Repairs	17
IV-33	Other Metal Works	1
V-3	Electroplating (Gold, Silver, Chromium, &c.)	1
IX-5	Bakeries (including Cakes and Pastry)	1
IX-19	Ice and Refrigerating	1
IX-33	Other Food Processing	1
X-1	Sawmills	1
X-4	Joinery	2
XI-1	Cabinet and Furniture Making	2
XII-2	Printing, Government	1
XV-6	Surgical and Other Scientific Instruments and Appliances ..	1
XVI-1	Electric Light and Power, Government	12
Total		70

Some of the major authorities maintaining these establishments are the Hydro-Electric Commission, the Transport Department, the Metropolitan Transport Trust, the various Marine Boards and the Public Works Department.

The following table analyses the principal items of factory statistics, showing the government and non-government components of the totals:

Government and Non-Government Factories, 1963-64

Particulars	Government Factories	Non-Government Factories	Total
Factories (No.)	70	1,676	1,746
Average Employment (a)—			
Males (No.)	2,352	23,869	26,221
Females (No.)	49	5,563	5,612
Salaries and Wages Paid (b)—			
Males (\$'000)	5,660	57,347	63,007
Females (\$'000)	60	7,515	7,575
Cost of Materials Used .. (\$'000)	5,286	149,327	154,613
Other Costs of Manufacture (c) (\$'000)	980	32,902	33,882
Value of Production .. (\$'000)	20,010	132,560	152,570
Value of Output .. (\$'000)	26,276	314,789	341,065
Value at 30th June of Land and Buildings (\$'000)	(d) 96,130	72,272	168,402
Value at 30th June of Plant and Machinery (\$'000)	38,598	103,054	141,652

(a) Average whole year (including working proprietors).

(b) Excludes amounts drawn by working proprietors.

(c) Comprises cost of power, fuel, light, water, lubricating oils, containers, tools replaced and repairs to plant.

(d) Includes value of dams, flumes, earth works, &c. ancillary to production of electricity from water.

In the costing of the output of some Government factories, reliance is placed on internal accounting procedures since, in most cases, the product does not find its way to the open market but may appear as a book-entry between sections of the one department. An obvious example of this occurs in sub-class IV-10 (Motor Vehicles—Repairs), the situation being that various departments and authorities maintain repair workshops for maintenance of their own vehicles.

GOVERNMENT HYDRO-ELECTRIC POWER

Introduction

Tasmania is unique among Australian States in that its electric power system is based exclusively on hydro-electric installations. Other Australian States rely, in the main, on thermal plants and hydro-electric power, if available, is used only to supplement the basic supply. The Snowy River Hydro-Electric Scheme which feeds power to the Victorian and N.S.W. grids is not designed to cope with the base load demand in these two States, and its essential function is to provide the extra power necessary to meet peak loads, and also to supply irrigation water to the inland.

Thermal power stations of any type are best suited to steady operation on base load. Steam cannot be raised at a moment's notice and having thermal capacity standing by to meet peak demands becomes very expensive. By way of contrast, a water turbine can pick up load very quickly as soon as the valve is opened.

In the Tasmanian situation, water power is required to meet the base load at all times and yet have the extra capacity to cope with peak loads. The Poatina machines, for example, with a head of 2,729 feet and a turbine rating of 415,200 horsepower, have the ability to take up a very big load, up to a maximum of 300,000 kilowatts, in a matter of minutes.

Concentration on water as a source of power has, in Tasmania, resulted in a particular pattern of development. Since water is virtually the sole source of electric power, it must be conserved even if rainfall is bountiful. Accordingly certain characteristics can be seen in the massive engineering works undertaken by the Hydro-Electric Commission:

(i) Emphasis on creation of storages; a scheme depending on the "run of the river" is found at Trevallyn but the decision not to create any substantial storage was forced by consideration for valuable agricultural land up-stream.

(ii) Emphasis on use of the same water over and over again; for example water from Lake St. Clair may pass through eight power stations before reaching the tidal waters of the Derwent at New Norfolk. Water from Lake Echo, thirty miles to the east of Lake St. Clair, also may pass through eight stations, the lower six being those fed by water from Lake St. Clair.

Certain indirect advantages have also accrued to the State through its concentration on hydro-electric power development. The first major undertaking at Waddamana on the Great Lake, opened in 1916, had relied heavily on horses and a wooden railway to get plant to the construction site. Subsequent development, usually in remote areas, led to the making of excellent roads, initially built by the Hydro-Electric Commission for access and construction purposes. In 1963, the Prime Minister announced that his government would make available a \$5,000,000 grant for a road in the remote south-west to facilitate investigations of future projects and this highway is being driven west to the junction of the Gordon and the Serpentine rivers.

The extensive storages built by the Hydro-Electric Commission on the Derwent drainage system have given engineers the ability to exercise extensive control over the flow, to the point where the scheme can be viewed as equivalent to flood prevention. If no extensive irrigation systems have yet been based on the controlled flows now available, the fact remains that the storages are there and the irrigation potential exists.

The possibilities of the Derwent catchment area have been almost fully exploited and the centre of activity is now shifting to the head waters of the north-west rivers, Mersey, Forth and Wilmot. The north-west scheme will not be finished until approximately 1971 but, in the meanwhile, survey is pushing ahead in the remote south-west (the Gordon River) and in the far west (Pieman River). The future development of hydro-electric power in either, or ultimately both, of these areas is full of exciting possibilities for the State. Quite apart from the massive loads of power available from these heavy-rainfall river systems, there is the certainty that an adequate road system will penetrate areas which have traditionally been described as "uninhabited and virtually unexplored."

A recent interesting development has been a 76 per cent increase in the effective storage of Lake King William, the work requiring the raising of the Clark Dam by 20 feet in the period 1964-1966. The original storage was 387 square mile feet and the new figure is 678 square mile feet.

In the generation of power from water, Tasmania has tended to be the pioneer State of the Commonwealth, as the following historical section will indicate.

Beginnings

The pioneering of public hydro-electric power in Tasmania was undertaken by the City of Launceston in 1895 when a 579 horse-power generator was installed at Duck Reach, situated on the South Esk two miles from its junction with the River Tamar. The station, with enlarged capacity, ran for sixty years but its function was purely municipal supply.

The scheme which eventually led to the establishment of a State-owned, State-wide supply of electricity was based upon exploitation of the waters of the Great Lake on the Central Plateau; the original impetus was given by Complex Ores Ltd. which, under an act of 1909, was given the right to generate power by diverting water from the River Shannon into the River Ouse, from the River Ouse via the Great Lake and back into the River Ouse, and from the Great Lake and the lakes and lagoons forming the source of the River Ouse. Complex Ores Ltd. assigned its property and undertakings to Hydro-Electric Power and Metallurgical Company Ltd. which began construction; in 1914 physical and financial difficulties eventually persuaded this company to sell out to a newly formed State authority, the Hydro-Electric Department, the purchase price being \$624,000.

Construction proceeded despite war-time difficulties, the work requiring a low dam across the Shannon outlet of the Great Lake to increase the lake storage to 500 square mile feet, a diversion canal from the Shannon, and finally pipelines to contain a head of 1,123 feet above Waddamana powerhouse on the left bank of the Ouse. In May, 1916, two machines, each of 4,900 horse-power, were brought into operation. Some indication of construction difficulties may be gained from the fact that chaff was a significant part of the capital cost—in the absence of adjacent roads or railways, a horse-drawn wooden tramway gave the only access.

In January, 1930, the *Hydro-Electric Commission Act 1929* came into force; the Hydro-Electric Commission was created to manage the existing works and to control the waters of the State, and in the Commission was vested the sole right of generating, distributing and selling electricity throughout Tasmania. Considering that present capacity of the generating system exceeds one million horsepower, it is interesting to record the system taken over by the Hydro-Electric Commission in 1930. It consisted of a single power station, Waddamana "A", with an installed turbine capacity of 65,800 horsepower; load on the system was 65,070 horsepower of which 37,000 horsepower was being taken by the Electrolytic Zinc Co. This company had commenced operations in 1917 at Risdon (near Hobart), the attraction to a Tasmanian site being the availability of cheap power for metallurgical refining.

Subsequent Development

To trace the expansion of turbine capacity from 65,800 horsepower in 1930 to the present day would be confusing if undertaken purely chronologically; the better course is to show the development of each major section of the generating network.

Waddamana-Shannon

A new Miena dam in 1922 replaced the original low weir across the Shannon outlet of the Great Lake and increased the storage to 1,482 square mile feet. The 1916 plant consisted of two 4,900 horsepower turbines (Pelton-type) and by 1923, nine turbines were in operation at Waddamana "A" with a rating of 65,800 horsepower. From the lagoon below Miena dam there was a considerable fall before the gorge of the Ouse was reached, and a Shannon power station using a head of 258 feet was completed in 1935; the added turbine capacity was only 14,500 horsepower but the principle—using the discharge of one station (Shannon) as the input for another (Waddamana)—was to be used over and over again in subsequent schemes. During World War II, a Waddamana "B" station was built, its last turbine coming into operation in 1949 and increasing total turbine capacity of the system by 66,800 horsepower.

An essential requirement for full development of the Waddamana-Shannon scheme was an increase in the volume of water draining into the Great Lake. To the west lay the upper Ouse and Lake Augusta in a rainfall belt exceeding 70 inches; by rockfill dams and the five and a half mile Liawenee canal, it became possible to divert water from the upper Ouse system into the Great Lake.

Details of the Waddamana-Shannon scheme in its final form are as follows:

Waddamana-Shannon

Power Station	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Waddamana "A" ..	1,123	2 7	4,900 8,000	65,800	49,000
Shannon	258	2	7,250	14,500	10,500
Waddamana "B" ..	1,127	4	16,700	66,800	48,000
Total .. ..	..	..	..	147,100	107,500

In 1964, the waters of the Great Lake started flowing through turbines at Poatina on the northern end and the generators of Waddamana "A" and Shannon stations were closed down; the more recent machines at Waddamana "B" are retained as spare plant and for emergency peak operation.

Tarraleah-Butlers Gorge

The essence of the Tarraleah-Butlers Gorge scheme was to divert the waters of the upper Derwent at a point 12 miles south of Lake St. Clair, lead them by canals to the gorge of the Nive River, and to obtain a head of 981 feet above Tarraleah power station on the right bank of the Nive. If full exploitation of the Derwent were to be made later, this was a logical starting place since Lake St. Clair (2,417 feet) is the source of the Derwent which achieves the major part of its fall to the sea in its first forty miles.

The scheme as stated above could have been carried through without any further refinement but the catchment area lies in a rainbelt where 90 inches per annum is not exceptional; accordingly the plan involved the creation of storages to achieve maximum practicable regulation of flow in a river system liable to sudden and considerable floods. The major control measure planned was the creation of the Clark Dam at the diversion point (Butlers Gorge) and of a 13 square mile reservoir (Lake King William) behind the dam. A further control measure was a dam across the Lake St. Clair outlet to raise its level ten feet and the installation of pumps capable of drawing off another twenty feet of water.

The decision to proceed with the scheme was taken in 1933, and, by 1938, the first three turbines were running in Tarraleah power house. The diversion canal (No. 1) ran from Butlers Gorge, but the intended dam was still under construction so the turbines had to rely on the Derwent "run of the river" and the storage in Lake St. Clair. War-time shortages slowed work and it was not until 1951 that the Clark Dam was completed. The dam, a concrete gravity arch structure 200 feet in height, is the biggest dam so far built in Tasmania, and incorporates a ski-jump spillway capable of discharging 20,000 cusecs; north of its walls, Lake King William then began to fill and eventually gave sufficient head to operate the 17,100 horsepower turbine in the Butlers Gorge power station at the foot of the dam. The Tarraleah station, which in 1938 was operating from the 11 square mile storage of Lake St. Clair, could now rely upon the combined storage of two lakes with total area 24 square miles (the creation of Lake King William increased the available storage from 241 square mile feet, as contained in Lake St. Clair, to a combined storage of 628 square mile feet, later raised to 919 square mile feet).

The original diversion canal was 12 and a quarter miles long but a second and shorter canal of eight miles was completed in 1955, an auxiliary feature being an electrical pump which can raise water, when required, from the Derwent through 160 feet. (The economics of using a pump here depend on the fact that the pumped water now passes through two extra power stations—Tarraleah and, lower down, Liapootah.) The two canals meet in a forebay, from which two steel pipelines lead to the crest of the gorge of the Nive River. From this point, six steel penstocks fall almost a thousand feet to the power station below.

The final work on the scheme involved diverting minor tributaries of the upper Nive by the eight mile Wentworth Creek canal and feeding their waters through the Tarraleah machines. Details of the Tarraleah-Butlers Gorge scheme are:

Tarraleah-Butlers Gorge

Power Station	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Butlers Gorge	184	1	17,100	17,100	12,200
Tarraleah	981	6	21,000	126,000	90,000
Total .. ..	..	..	..	143,100	102,200

Tungatinah-Lake Echo

The essence of the Tungatinah-Lake Echo scheme was to divert the waters from two rivers, the Nive and the Ouse, to lead them to the gorge of the Nive and to obtain a head of 1,005 feet above the Tungatinah power station on the left bank of the gorge. (Tarraleah on the right bank is almost opposite, providing the spectacle of two power stations simultaneously discharging into the same river bed but drawing their inputs from separate and distinct catchment areas.) A further source of power was envisaged on the route from Lake Echo to Tungatinah where a head of 568 feet could be utilised.

The scheme was approved in 1947 and the Tungatinah power station was finally completed in 1954. Since two rivers were involved, the scheme needs to be envisaged as two distinct operations which, for convenience, can be thought of as forming the two arms of a "Y". The west arm of the "Y" represents the diversion of the Nive by a 121 foot concrete gravity dam (Pine Tier) and the leading of water, via Bronte Canal, and Bronte Lagoon to Bradys Lake. Most of the new water-ways, apart from canals, were created by low clay and rockfill dams on the borders of former marshlands. The east arm of the "Y" represents the diversion of the Ouse by a weir and the passage of water through Monpeelyata Canal to Lake Echo; from Lake Echo, dammed by a 62 foot clay and rockfill wall, water passes through a canal into Lake Echo power station and discharges into Dee Lagoon, formed by blocking off the Dee River with a clay and rockfill dam 65 feet high; the water then passes through a two and a quarter mile tunnel into Bradys Lake where it mingles with water flowing in from the west arm diversion. The foot of the "Y" represents the chain of waterways, commencing with Bradys Lake, leading to Lake Binney and finishing at Tungatinah Lagoon, 1,000 feet or so above the Nive Gorge.

The final movement of water to Tungatinah power house is through a half mile tunnel to five steel penstocks, 3,376 feet long. Details of the Tungatinah-Lake Echo scheme are as follows:

Tungatinah-Lake Echo

Power Station	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Lake Echo	568	1	45,000	45,000	32,400
Tungatinah	1,005	5	35,000	175,000	125,000
Total .. ..	..	..	..	220,000	157,400

The power station at Lake Echo is operated by remote control from Tungatinah and the machine is fitted with numerous protective devices to guard against such mishaps and defects as accidental overspeeding, overheated bearings and other faults which could arise while running unattended.

Liapootah-Wayatinah

It will be observed that the schemes so far described have, in the main, depended on heads of water in the vicinity of a 1,000 feet. From the Tarraleah tailrace, however, the fall to the sea is only 1,121 feet distributed over eighty miles; it necessarily follows that stations below Tarraleah have to be designed to operate with lower heads, but this disadvantage can be partly offset if the volume of water is increased.

The essence of the Liapootah-Wayatinah scheme was to dam the water discharged by the stations at Tarraleah and Tungatinah into the bed of the Nive; to use the impounded water to drive a power station at Liapootah; to merge the Liapootah discharge with the waters of the Derwent in Wayatinah lagoon and finally to drive a station with the head in the lagoon, discharge to flow into the Derwent lower down.

The Liapootah dam, a concrete gravity structure 120 feet high, carries a steel drum gate 20 feet high and 120 feet long on the spillway. It is automatic in operation, and retains the upstream pond at fixed level so that Tarraleah power station, two miles upstream, is not subject to flooding by any "backing up" of the flow. From the dam, water passes into a tunnel four miles long, then via three steel penstocks into Liapootah power station (head 361 feet).

The discharge from Liapootah power station then enters a new lagoon at Wayatinah, the pond being created by a clay and rockfill dam at the confluence of the rivers Derwent and Nive. The lagoon is drained by a tunnel a mile long and the waters then enter Wayatinah power station via twin pipelines; discharge occurs on the left bank of the Derwent.

Details of the Liapootah-Wayatinah scheme which began yielding in 1957 and reached full capacity in 1960, are as follows:

Liapootah-Wayatinah

Power Stations	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Liapootah	361	3	39,000	117,000	83,700
Wayatinah	203	3	20,500	61,500	38,250
Total .. ..	..	..	..	178,500	121,950

Catagunya

In the lower reaches of the Derwent, opportunity for developing large heads gradually lessens but compensation is derived from the increased flow. Thus the Catagunya scheme not only depends on using the discharge from Wayatinah but also the waters of the Derwent augmented by tributaries—the Florentine and Black Bobs Rivulet. Compared to other schemes, it is relatively simple to describe, consisting of a dam across the Derwent, a short flume and twin penstocks leading to Catagunya power station; the discharge is again into the Derwent.

There are two unusual features: (i) the power station is worked by remote control from Liapootah; (ii) the Catagunya Dam, 165 feet high, is built of pre-stressed concrete, thus cutting in half the amount of concrete that would be required by a concrete gravity dam. In effect, the dam was "tied" to the base dolerite by means of steel cables and tensioning force was applied to the cables with hydraulic jacks. Details of the scheme which began yielding power in 1962 are as follows:

Catagunya

Power Station	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Catagunya	144	2	33,500	67,000	48,000

Lower Derwent

At Catagunya power station tailrace, the height is only 411 feet above sea level but the Derwent in its lower course is fed by a number of tributaries which build the volume to the point where exploitation is still economic despite the low head. On the other hand, the Derwent below Catagunya is starting to emerge into farm land and no scheme could be considered which would put such property under large tracts of water. The Lower Derwent scheme, still under construction, consists of three stations:

Repulse. A dam across the Derwent will arrest the Catagunya discharge, residual flow in the Derwent and the added flow of the Repulse River. Head will be 88 feet and installed capacity 28,000 kilowatts.

Cluny. A low dam across the Derwent will arrest the Repulse discharge, residual flow in the Derwent and the added flow of the Broad River. Head will be 56 feet and installed capacity 21,250 kilowatts.

Meadowbank. A final dam across the Derwent will impound the Cluny discharge, residual flow in the Derwent and the flow of the Dee, Ouse and Clyde Rivers. Head will be 96 feet and installed capacity 40,000 kilowatts. Meadowbank power station will discharge into the Derwent not far from New Norfolk where the river becomes tidal; thus, at Meadowbank, the last opportunity is taken of exploiting water which originated in Lake St. Clair, Lake Echo, the upper Derwent or its tributaries, and which has already, in the main, passed through a series of stations.

Capacity. The Lower Derwent scheme will add at least a further 123,500 horsepower to system capacity and is expected to be completed in 1967.

Trevallyn

It will be observed that all schemes so far described, from Waddamana through to the Lower Derwent, have depended on the Derwent catchment area, including the Great Lake. An exception is the Trevallyn scheme, based on the South Esk which tumbles through a precipitous gorge within sight of the city streets in Launceston. In essence, the scheme consists of a dam across the South Esk, a tunnel to take diverted water to Trevallyn power station and a tailrace which discharges into the tidal Tamar River.

Design of the scheme was complicated by certain characteristics of the South Esk—recorded flow has dropped as low as 40 cusecs yet in April, 1929, it exceeded 150,000 cusecs. If a large storage were created, the waters would

obviously "back up" and flood valuable agricultural land upstream. Accordingly Trevallyn is a "run of the river" scheme with only daily pondage at the tunnel inlet. The dam is a concrete gravity type, 108 feet at abutments and 72 feet to the spillway crest and the diversion conduit includes an open pipe section between two tunnels, the total tunnel length being two miles.

One particular advantage claimed for the scheme is the fact that the South Esk responds well to easterly rains, since the river drains the eastern slopes of Ben Lomond. The easterly weather often provides the flow down the South Esk to run the Trevallyn machines during comparatively dry periods over the western catchments. Westerly weather replenishes the main system's storages and provides water to the Derwent stations while the Trevallyn output is reduced to a minimum.

Details of the scheme, completed in 1955, are as follows:

Trevallyn

Power Station	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Trevallyn 	415	4	28,000	112,000	80,000

Great Lake (Poatina)

As already related, the first development of a State generating system was based on using the waters of the Great Lake at its southern extremity. The discharge from the Shannon and Waddamana power stations passed into the Ouse River and further development along the bed of the Ouse was a possibility considered. The north-eastern end of the Lake, however, presented an opportunity for much greater exploitation; this end of the Lake is separated by a single mountain ridge from a precipitous fall to the midland plain more than half a mile below. The essence of the Poatina scheme was to tunnel through a ridge of the Great Western Tiers and to develop a head of 2,729 feet above an underground power station, the discharge to flow into a tributary of the South Esk. In other words, a lake that naturally drained south was to be drained artificially to the north. Since the high head obtained by this diversion would yield an estimated 415,200 horsepower, it was planned to put Waddamana "A" (65,800 horsepower) out of operation and to keep Waddamana "B" (66,800 horsepower) as stand-by plant only. Thus the waters of the Great Lake would still be a prime source of power but the northern station would use them with greatly increased efficiency.

A headrace tunnel three and a half miles long, of 19 foot diameter, leads the Lake water through the Western Tiers to a penstock tunnel 3,270 feet long lined with steel pipe; this tunnel emerges from the ridge to join a surface penstock of 5,080 feet, made from hot banded high-tensile steel; the surface penstock terminates above a 480 feet vertical shaft leading to the underground power station; the discharge from the station flows through a tailrace tunnel two miles long before entering a tailrace cut terminating in Brumby Creek.

Only six miles from the Great Lake lie two others known as Arthurs Lakes; an important part of the scheme was to block off an outlet and create one enlarged lake, of which the waters would then be pumped to a height of 256 feet before passing by flume into the Great Lake. The economy of this

operation depends on the fact that water raised 256 feet by pumping acquires a head of 2,729 feet above Poatina power station; the new Arthurs Lake increases the usable storage by approximately one quarter.

Details of the Poatina scheme, which started yielding power in 1964, are as follows:

Poatina

Power Station	Head Ft.	Turbines		Station Capacity	
		No.	Rating H.P.	Turbines H.P.	Generators K.W.
Poatina	2,729	(a) 6	69,200	(a) 415,200	(a) 300,000

(a) Five turbines had been installed before June, 1966.

With the completion of the Poatina scheme, the possibility of further developing the Derwent catchment area was exhausted (apart from the Lower Derwent Scheme which is expected to be operating at all three sites by 1967). The centre of activity now is located in the area of three rivers, flowing towards Bass Strait.

Mersey-Forth (Under Construction)

The theory of the Mersey-Forth-Wilmot scheme is derived from the fact that none of these three rivers in isolation provides an economic source of power; the essence of the scheme is the diversion of the Mersey and Wilmot Rivers into the Forth River and the construction of Forth River dams, the power to be derived from the operation of seven distinct power stations. Some idea of the magnitude of the undertaking can be gained from considering two factors: (i) output capacity; when the new scheme is completed, by 1971, the output capacity of the State system will have risen by 44 per cent; (ii) installed capacity, turbines; on completion of the new scheme, the installed turbine capacity of the State system will stand at over 1,640,000 horsepower.

To comprehend the scheme, it is necessary to visualise the Forth as lying in the centre with the Mersey to the east and the Wilmot to the west. The power stations are planned as follows:

(i) *Rowallan*. The upper Fisher, a Mersey tributary, will be dammed to form Lake Rowallan and a power station built with a head of 163 feet.

(ii) *Fisher*. Fisher power station (head 2,100 feet) will be fed from Lake MacKenzie and discharge into the Fisher above its junction with the Mersey.

(iii) *Lemonthyme*. The Mersey will be dammed below its junction with the Fisher and diverted, through Lemonthyme power station (head 530 feet) into the Forth River.

(iv) *Cethana*. A dam lower down the Forth will feed the Cethana power station (head 320 feet).

(v) *Wilmot*. A dam on the Wilmot will divert water to the Forth through Wilmot power station (head 840 feet); the discharge will occur above Cethana station.

(vi) *Devils Gate*. A dam on the Forth below Cethana will feed Devils Gate station (head 230 feet).

(vii) *Paloona*. The final dam on the Forth will feed the Paloona station (head 100 feet). The discharge from Paloona will be about 70 feet above sea level, so all possibility of further exploitation will have been exhausted at this point.

The order of stations in the previous description was chosen to show the logical progression from the headwaters in the highlands to the final point on the coastal plains. The actual programme approaches the task in a different order, the stations in construction sequence being: Rowallan, Lemonthyme, Devils Gate, Paloona, Cethana, Wilmot and Fisher. The first station is expected to be in operation by 1968 and the last by 1971.

Summary of System

The previous sections have shown details of each scheme; the following table brings the information into consolidated form and gives a measure of the total capacity of the generating system:

Capacity of Each Station and Estimated Total Capacity in 1967

Power Stations	Date of Entry Into Service	Station Capacity	
		Turbines H.P.	Generators K.W.
Waddamana	A—1916 B—1944	} 132,600	} 97,000
Shannon	1934		
Tarraleah	1938	126,000	90,000
Butlers Gorge	1951	17,100	12,200
Tungatinah	1953	175,000	125,000
Trevallyn	1955	112,000	80,000
Lake Echo	1956	45,000	32,400
Wayatinah	1957	61,500	38,250
Liapootah	1960	117,000	83,700
Catagunya	1962	67,000	48,000
Poatina	(a) 1966	346,000	250,000
Lower Derwent Stations	1967	123,500	89,250
Gross Total (b) .. .. .	..	1,337,200	956,300
Less Waddamana "A"	1916	65,800	49,000
Less Shannon	1934	14,500	10,500
Net Total (c) .. .. .	..	1,256,900	896,800

(a) The first turbines came into operation in 1964. The last will not be installed before 1970 or 1971.

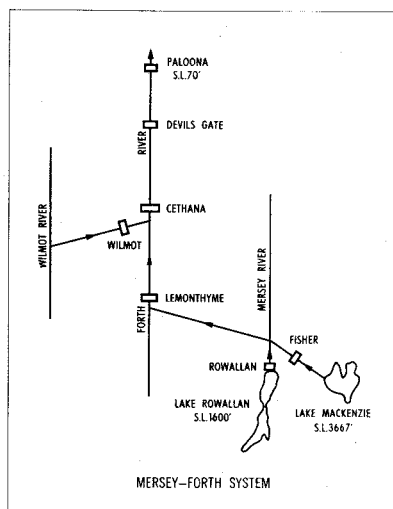
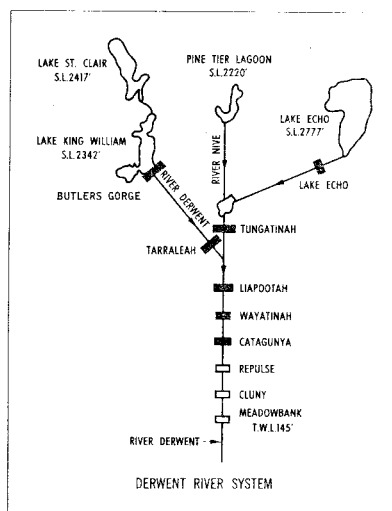
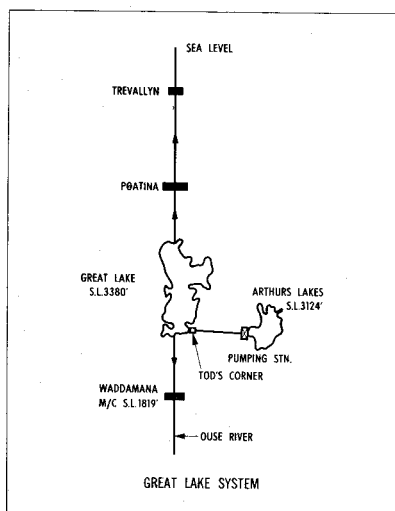
(b) Total capacity of all machines installed at any time.

(c) Remaining capacity, with Waddamana "A" and Shannon machines dismantled.

Control

The Hydro-Electric Commission is an autonomous semi-governmental authority, responsible almost entirely for the conduct of its own affairs. The "Minister Administering the Hydro-Electric Commission Act" is answerable to Parliament for the activities of the Commission, but the Commission is not directed by or responsible to the Minister as is a government department. In other words, the Commission is envisaged as a trading or business organisation, and the purpose of the legislation that created it was to remove it from day to day political control. The power exerted by Parliament is mainly

financial, not over the ordinary revenue and expenditure of the authority, but over the supply of loan moneys for new capital works. Thus at the 30th June, 1965, the loan debt of the authority stood at \$248 million of which \$225 million came from State loan funds; the balance was raised by the authority itself on the semi-governmental loan market, power to raise money in this field having been conferred in 1952. New power developmental works require the sanction of Parliament before any work may be commenced, and loan funds are allocated through the State Treasury from the sums made available to the State by a Federal body, the Australian Loan Council which borrows money on behalf of all States.



Diagrams to illustrate the Great Lake, Derwent and Mersey-Forth hydro electricity generating systems. The black rectangles represent power stations; open rectangles indicate proposed stations.

Two other restrictions on the Commission can be listed: (i) It cannot change its tariff charges for the supply of electricity to consumers except with the approval of the Governor-in-Council. Theoretically this could lead to tariff charges being deliberately kept lower than at an economic level; in practice, this has not happened since the Commission is expected to operate as a bona-fide business organisation and to recoup its operating expenses from adequate charges. (ii) In certain of its dealings, such as in real estate, the Commission must obtain the approval of the Minister.

The status of the Commission was described thus by the High Court of Australia in a judgment delivered in 1950: "In the eye of the law the corporation is its own master and is answerable as fully as any other person or corporation. It is not the Crown and has none of the immunities or privileges of the Crown. Its servants are not civil servants and its property is not Crown property."

Organisation

Under the Commission, with its full time Commissioner and three part-time Commissioners, there are five branches:

(i) *Civil Engineering Branch*. Responsible for: survey of water resources; design and construction of all civil works involved in power development and allied projects.

(ii) *Electrical Engineering Branch*. Responsible for: studies of load growth and system development; design and construction of all electrical engineering works in conjunction with the Civil Engineering Branch.

(iii) *Power Branch*. Responsible for: operation and maintenance of completed power developments; generation and transmission of power in bulk.

(iv) *Retail Supply Branch*. Responsible for: distribution of electricity to consumers; operation and maintenance of the distribution system; inspection of installations and equipment.

(v) *Secretarial*. Responsible for: general administrative business of Commission with sub-sections dealing with accounts, law, personnel, transport, stores and purchasing, medical services, central records and other services.

Construction Policy

Apart from its function of meeting all present demands for electrical power, the Commission has the heavy responsibility of estimating probable future demand and of having the necessary capacity to satisfy it as it occurs. In making estimates of future demand, there are four basic factors to be considered:

(i) Growth of population affecting number of home consumers, light industries, shops, &c.

(ii) Technological change favouring greater use of electrical power in homes, factories, shops and offices.

(iii) Increased demands for power by heavy industrial users now operating e.g. in the metallurgical, chemical and paper pulp industries.

(iv) Possibility of other "power-intensive" industries setting up plants in the State.

The difficulty of good planning is accentuated by the fact that hydro-electric development consumes capital far more avidly than the creation of equivalent capacity by thermal generation (put another way, thermal plants are cheaper to build but much more expensive to operate). Prudent economic policy dictates that an authority should try to keep just ahead of demand, and not have an unremunerative investment in a large block of idle generating capacity; the margin in hand at any given time is therefore comparatively small. Construction is a continuous process regulated to ensure that future demand will be met and restrictions in supply avoided. The pattern of the Commission's plan for the immediate future can be seen in terms of the following schedule:

By 1967: full development of Lower Derwent scheme with all three power stations in operation.

By 1970: full development at Poatina with six turbines operating.

By 1971: full development of Mersey-Forth-Wilmot scheme with seven power stations operating.

It will be observed that the Lower Derwent and Mersey schemes involve 10 new power stations, and it is planned to bring at least two new stations into operation, on the average, for each year in the period 1967-1971. Long before 1971, however, the Commission will have had to plan its next scheme so that construction activity can gradually be transferred from the Mersey scheme to a new site, possibly the Pieman or Gordon Rivers on the West Coast.

Generation and Transmission

The system of generation and transmission employed in Tasmania is completely integrated and load control engineers can call upon the capacity of any generator throughout the State. Operation can be viewed in both short term and long term aspects. In the short term, the major consideration is meeting the daily fluctuation in demand (which follows a fairly standard pattern with morning and evening peaks); there is the added responsibility of having stand-by turbines spinning as a precaution against break-down of generators under load.

In the long term, the main consideration is the operation of storages in such a way as to conserve water, to ensure that all water released is exploited to the maximum, and to obtain maximum benefits from rainfall. The more dispersed the Commission's storages become, the greater the opportunity for taking advantage of local rainfall by maximum operation of power stations below the affected catchment since the process of drawing on the storage "makes room" for drainage from the downpour.

The original high voltage transmission in the State was at 88,000 volts. When Tarraleah came into operation, new lines operated at 110,000 volts; main transmission lines built since 1957 operate at 220,000 volts.

Retail Distribution

In the early days of the Commission's operation, consumers of electrical power received it from three sources: from municipalities with their own generating capacity; from municipalities retailing power bought from the Commission; and from the Commission direct. Gradually uniformity was achieved, municipalities stopped generating and retailing and the one authority became the sole supplier, both of bulk power to industry and retail power to

homes, shops, businesses, &c. One effect has been uniformity in tariff charges for retail power so that the farmer on the most remote holding is charged no more than dwellers in the principal cities.

Earlier it was stated that the Commission is supposed to operate as a business organisation and "pay its way". This posed something of a problem in the carrying of power to remote locations with few potential consumers—in such cases, the capital cost of the extension would be a heavy burden on the consumer. Special legislation existed to subsidise the Commission when it made "uneconomic extensions", the State Treasury granting assistance up to 75 per cent of the capital cost, if not exceeding \$600 per consumer. (This State subsidy was withdrawn in 1964-65.) The operation of this provision undoubtedly contributed to Tasmania's achieving an Australian record figure for distribution of electrical power—it is estimated that over 98 per cent of homes and farms are now connected.

To complete the picture, it is necessary to deal with electricity supply in the three main islands off the Tasmanian coast. Bruny Island is connected to the major grid by under-sea cable, King Island is supplied from an internal combustion plant operated by the Commission while Flinders Island depends upon an internal combustion plant leased by a private operator.

Growth of Hydro-Electric System

The following table shows the growth of the system in recent years:

Hydro-Electric Commission—Operating Statistics

Year	Total Rating of Turbines	Total Rating of Alternators	Peak Loading	Average Loading	Average (a) Load Factor
	H.P.	K.W.	K.W.	K.W.	Per Cent
1955 ..	542,200	389,700	284,400	184,440	64.9
1956 ..	622,200	447,100	343,300	225,690	65.7
1957 ..	683,700	485,350	372,200	254,100	68.3
1958 ..	683,700	485,350	394,900	266,660	67.5
1959 ..	683,700	485,350	403,600	274,150	67.9
1960 ..	800,700	569,050	415,400	285,250	68.7
1961 ..	800,700	569,050	438,400	297,080	67.8
1962 ..	867,700	617,050	461,600	323,790	70.1
1963 ..	867,700	617,050	550,300	378,000	68.7
1964 ..	1,130,000	806,550	582,000	405,620	69.7
1965 ..	1,133,400	807,550	593,700	427,580	72.0

(a) Average loading as a percentage of peak loading.

Average Load Factor

The alternator rating is necessarily much higher than the peak loading since some generating plant must be held in reserve against the possibility of break-down.

A power system must be designed to meet both the peak loading (the demand component) and the average loading (the energy component). Peak loading tends to represent high demand for relatively short periods, i.e. it has relatively little energy associated with it. The obvious design and operational problem is to create sufficient capacity to meet peak loading and, at the same

time, to encourage the use of power so that the highest possible average loading is obtained. "Off-peak" heating systems are an obvious example of one way in which the average load factor can be maximised; the steady use of power in a continuous industrial production process also has the effect of raising the average loading and lifting the load factor.

All things being equal, the cheapest system, from the consumers' point of view, will be the one with the highest average load factor. By world standards, the average load factors in the previous table indicate a high standard of design and operational efficiency.

Price of Power to Consumers

Hydro-electric power requires heavy initial capital expenditure; actual operating expenses are comparatively low, the major burden on revenue being interest and other associated debt and depreciation charges. Thermal stations do not require such heavy capital outlay but their operating expenses are considerably higher. In considering the data in the table below, it is to be recalled that Tasmania draws its power exclusively from water-driven turbines while the other States rely basically on thermal plants (although the eastern States make limited use of hydro-electric power). The table shows comparative average prices for power in the Commonwealth:

Price of Electric Power—Tasmania and Other States, 1963-64 (a)
(Cents per Kilowatt Hour)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Total Sales (d)
New South Wales	2.03	3.17	1.76	2.05
Victoria	1.93	3.12	1.62	1.96
Queensland	2.09	(b)	(b)	2.27
South Australia	1.78	2.98	1.75	2.02
Western Australia	2.46	3.05	1.86	2.40
Tasmania	1.41	2.00	0.50	0.75
Commonwealth Territories ..	2.17	(b)	(b)	2.53
Commonwealth (Average) ..	1.97	(c)	(c)	1.91

(a) Source: "Statistics of the Electricity Supply Industry in Australia" (published by Electricity Supply Association of Australia).

(b) Not recorded separately.

(c) Not available.

(d) Includes power for traction, public lighting, &c. not specified in first three columns.

It will be observed that the Tasmanian average is the lowest in all types of sale. The Tasmanian householder pays less per unit on the average than his counterpart on the Australian continent but the difference in residential price gives little indication of the economy of hydro-electric generation; this can be best obtained by comparing the prices charged industrial users and, in this field, Tasmania has a very obvious advantage. The householder may be tempted to ask why industry should not pay more and the residential sale price be reduced. The answer is simple: to diversify the Tasmanian economy and to give employment to an increasing work force, industry has had to be attracted to the island; cheap bulk power has been, and will continue to be, a major attraction.

The following table shows the amount of power sold in the Commonwealth:

Sales of Electric Power—Tasmania and Other States, 1963-64 (a)
(Million Kilowatt Hours)

State or Territory	Residential Sales	Commercial Sales	Industrial Sales	Total Sales (b)
New South Wales	3,882.5	1,211.2	4,031.1	9,622.3
Victoria	2,582.0	991.0	2,990.1	6,924.0
Queensland	1,136.3	503.9	823.7	2,517.7
South Australia	851.0	250.0	759.5	1,899.1
Western Australia	374.3	220.6	316.1	930.3
Tasmania	616.2	103.6	2,251.0	2,984.5
Commonwealth Territories ..	144.0	(c)	(c)	324.6
Commonwealth Total	9,586.3	(c)	(c)	25,202.5

(a) Source: "Statistics of the Electricity Supply Industry in Australia" (published by the Electricity Supply Association of Australia).

(b) Includes power for traction, public lighting, &c. not specified in first three columns.

(c) Not available.

It is noteworthy that Tasmania, despite its small population, ranks third in total sales and third in industrial sales; no other State sells such a large proportion of total power to industrial users.

Industrial Use of Electric Power

One of the chief purposes in developing the State's hydro-electric power has been to attract industry to Tasmania; the advantage of assured supply at relatively low price has been used to offset any disadvantage associated with location on an island separated from the principal continental road and rail systems.

With regard to this policy, it is possible to obtain some indication of the importance of industrial electrical power in Tasmania from the following table:

Industrial Electrical Energy Consumption (a)

Commonwealth Total (Six States)	Tasmanian Consumption	
	Total	Proportion of Commonwealth Total
Million KWH	Million KWH	Per Cent
11,170	2,251	20.2

(a) Source: Statistics of the Electricity Supply Association of Australia, year ending 30th June, 1964.

When the Tasmanian proportion (20.2 per cent) is compared with Tasmania's share of the Australian population (3.3 per cent), the contribution of electrical power to the island's economy is seen in its correct perspective.

Finances of Hydro-Electric Commission

The table that follows shows the Commission's income and expenditure, and also its total loan debt for the last three years:

Hydro-Electric Commission Income, Expenditure and Net Loan Debt (\$'000)

Particulars	1961-62	1962-63	1963-64
INCOME			
Sales—Bulk Power	4,642	6,252	7,392
Retail Current	13,166	14,002	14,921
Other Income	348	398	429
Total	18,156	20,652	22,742
EXPENDITURE			
Operation, Distribution, Administration	6,142	6,694	7,252
Interest on Loans and Reserves	9,284	10,002	10,731
Less Interest Capitalised	Cr. 1,470	Cr. 1,488	Cr. 1,828
Depreciation Provision	2,358	2,432	2,625
Superannuation Contribution	834	836	1,271
Other Expenditure	510	540	799
Net Profit	498	1,636	1,892
Total	18,156	20,652	22,742
NET LOAN DEBT AT 30TH JUNE			
Net Loan Indebtedness to State Treasury ..	185,924	197,824	210,311
Other Loans	20,200	21,200	22,001
Total	206,124	219,024	232,312

Operations in 1964-65

For 1964-65, the net profit of the Commission was \$1,509,000. At 30th June, 1965, net loan debt was \$247,662,000, the liability to the State Treasury standing at \$224,961,000.

Chapter 9

SOCIAL CONDITIONS

HOUSING AND BUILDING

Dwelling Statistics, 1961 Census

General

The following tables contain an analysis, in summary form, of the dwellings in Tasmania as enumerated at the Census of 30th June, 1961, and in some instances, show comparisons based on the 1954 Census.

In the tables, "Hobart and Suburbs" relates to the City of Hobart, the City of Glenorchy and suburban portions of the adjacent municipalities of Clarence and Kingborough. "Launceston and Suburbs" relates to the City of Launceston and suburban portions of the adjacent municipalities of Beaconsfield, Lilydale, St. Leonards and Westbury. The remaining "Other Urban" classification relates to towns with populations exceeding 750 persons. "Rural" relates to the remainder of the State.

Terms used in the tables to describe various classes of dwellings are defined below:

Occupied Dwelling

An occupied dwelling is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term, therefore, has a very wide reference and includes, in addition to houses and flats, a great variety of "dwellings" ranging from a single-roomed shack to a multi-roomed hotel or institution. Occupied dwellings are classified into "private" and "other than private" dwellings.

Private Dwellings

Private dwellings are further classified into the following four categories:
Private House: These include houses, sheds, huts, garages, &c. used for dwelling purposes, and shared private houses for which only one Householder's Schedule was received.

Share of Private House: This is a portion of a shared private house which is occupied separately and for which portion a separate Householder's Schedule was furnished.

Flat: This is a part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities.

Other Private Dwellings: These include private dwellings such as rooms, apartments, &c. which are parts of buildings but are not self-contained units.

Other Than Private Dwellings

These include hotels; motels; boarding houses, lodging houses and hostels; educational, religious and charitable institutions; hospitals; defence and penal establishments; police and fire stations; residential clubs; staff barracks and quarters, &c.

Unoccupied Dwellings

These include vacant dwellings available for sale or renting; dwellings such as "week-ender", "holiday-home", "second home", "seasonal workers' quarters", which were not occupied on the night of the Census; dwellings normally occupied but whose usual occupants were temporarily absent on the night of the Census; newly completed dwellings whose owners or tenants had not entered into occupation on the night of the Census; dwellings described as "to be demolished", "condemned", "deceased estate" and buildings constructed as dwellings but used for non-dwelling purposes on the night of the Census. The total number of unoccupied dwellings shown must not be read as representing the number of vacant houses and flats available for sale or renting.

Classes of Occupied Dwelling

The following table gives particulars of the various classes of occupied dwellings for the urban and rural areas of Tasmania at the Census of 30th June, 1961:

Occupied Dwellings by Class of Dwelling at Census of 30th June, 1961

Class of Dwelling	Hobart and Suburbs	Launceston and Suburbs	Other Urban	Rural	Total Tasmania
Private Dwellings—					
House	25,022	12,966	16,968	24,841	79,797
Shed, Hut, &c. .. .	290	115	186	893	1,484
Share of Private House .. .	1,286	532	464	173	2,455
Flat	3,126	1,450	779	219	5,574
Other	450	297	120	21	888
Total Private Dwellings ..	30,174	15,360	18,517	26,147	90,198
Dwellings Other Than Private—					
Hotel, Licensed	76	40	64	97	277
Motel	6	3	2	6	17
Boarding House, &c. ..	239	82	82	53	456
Educational Institution ..	15	7	5	3	30
Religious Institution (a) ..	13	7	17	6	43
Charitable Institution (b) ..	8	6	1	3	18
Hospital	13	6	19	15	53
Other	36	19	35	76	166
Total Dwellings Other Than Private	406	170	225	259	1,060
Total Occupied Dwellings	30,580	15,530	18,742	26,406	91,258

(a) Non-educational.

(b) Other than hospitals.

Material of Outer Walls

The next table classifies occupied private dwellings according to the material of their outer walls:

**Occupied Private Dwellings Classified According to Material of Outer Walls
At Census of 30th June, 1961**

Material of Outer Walls	Hobart and Suburbs	Launceston and Suburbs	Other Urban	Rural	Total Tasmania
Brick	10,339	4,883	2,267	1,260	18,749
Stone	680	29	53	573	1,335
Concrete	1,183	674	1,108	522	3,487
Wood	17,555	9,442	13,758	21,701	62,456
Iron	11	11	449	277	748
Fibro-cement	252	211	787	1,672	2,922
Canvas, Hessian, &c. ..	..	..	..	19	19
Other	131	108	84	105	428
Not Stated	23	2	11	18	54
Total	30,174	15,360	18,517	26,147	90,198

Comparable State figures from the Census of 30th June, 1954 were: brick, 15,083; stone, 1,555; concrete, 2,703; wood, 54,370; iron, 724; fibro-cement, 2,655; calico, canvas, hessian, 74; other, 432; not stated, 51; total Tasmania, 77,647.

Classification by Rooms

The following table shows the number of rooms per occupied dwelling:

**Occupied Private Dwellings Classified According to Number of Rooms (a)
At Census of 30th June, 1961**

Number of Rooms Per Occupied Dwelling	Hobart and Suburbs	Launceston and Suburbs	Other Urban	Rural	Total Tasmania
1	276	143	150	501	1,070
2	894	374	368	576	2,212
3	1,848	790	681	933	4,252
4	4,445	2,133	2,598	4,468	13,644
5	11,654	6,340	8,185	8,932	35,111
6	7,064	3,885	4,500	6,516	21,965
7	2,393	1,035	1,367	2,440	7,235
8	845	387	406	934	2,572
9	356	128	118	364	966
10	167	52	43	183	445
11 and Over	131	58	65	250	504
Not Stated	101	35	36	50	222
Total	30,174	15,360	18,517	26,147	90,198

(a) See following narrative for definition of room.

Comparable State figures from the Census of 30th June, 1954, were: 1 room (1,382); 2 (2,746); 3 (4,112); 4 (13,410); 5 (27,208); 6 (18,341); 7 (6,190); 8 (2,294); 9 (875); 10 (489); 11 and over (448); not stated (152); Tasmanian total (77,647).

In the preceding table, "rooms" include kitchen and permanently enclosed sleep-out, but do not include bathroom, pantry, laundry or storehouse. Rooms in non-attached buildings are included only if used for living or sleeping purposes by the household group. Rooms recorded for a "share of private house" include only those used by the occupier of the share. A shared kitchen or living room is recorded only for the share occupied by the owner or principal tenant.

Details of Inmates and Rentals

The following table shows, for occupied private houses and flats, the average number of inmates, the average number of rooms, the average number of inmates per room and average weekly rents for tenanted unfurnished houses or flats; the rent figures exclude particulars of dwellings occupied by tenants of the State housing authority (Housing Department).

**Occupied Private Houses and Flats—Average Number of Inmates, Rooms
and Inmates per Room and Average Weekly Rent (Unfurnished)**

Particulars at 30th June	Number of Houses or Flats	Average Number Of—			Average Weekly Rent (Unfurn- ished) (a) (\$)	
		Inmates Per House or Flat	Rooms Per House or Flat	Inmates Per Room		
OCCUPIED PRIVATE HOUSES (b)						
Hobart and Suburbs	1954	20,276	3.85	5.39	0.71	3.65
	1961	25,312	3.83	5.46	0.70	7.03
Launceston and Suburbs	1954	10,924	3.76	5.35	0.70	3.31
	1961	13,081	3.66	5.44	0.67	6.65
Other Urban	1954	13,819	3.82	5.24	0.73	3.12
	1961	17,154	3.87	5.34	0.72	4.98
Rural	1954	25,696	3.84	5.20	0.74	1.87
	1961	25,734	3.84	5.35	0.72	3.01
Total Tasmania ..	1954	70,715	3.83	5.29	0.72	2.88
	1961	81,281	3.81	5.39	0.71	4.82
OCCUPIED FLATS						
Hobart and Suburbs ..	1954	1,382	2.71	4.33	0.63	4.84
	1961	3,126	2.57	4.06	0.63	9.40
Launceston and Suburbs	1954	757	2.60	4.16	0.63	4.19
	1961	1,450	2.59	4.09	0.63	8.51
Other Urban	1954	297	2.74	4.04	0.68	3.64
	1961	779	2.75	3.99	0.69	7.28
Rural	1954	98	3.31	4.38	0.76	2.92
	1961	219	2.89	4.22	0.68	4.21
Total Tasmania ..	1954	2,534	2.70	4.25	0.64	4.47
	1961	5,574	2.61	4.06	0.64	8.55

(a) For houses or flats (excluding Housing Department dwellings) occupied by tenants.

(b) Includes houses, sheds, huts, &c. and shared private houses for which only one Householder's Schedule was received.

Nature of Occupancy

In the next table, occupied private houses and flats are analysed to show the nature of occupancy.

It will be observed that, in the occupancy of private houses, there has been a marked increase in the categories "owner" and "purchaser by instalments", while the two tenant categories, in total, show a considerable decline; in the occupancy of flats, however, the two tenant categories, in total, have more than doubled.

Occupied Private Houses and Flats Classified According to Nature of Occupancy

Particulars at 30th June	Owner	Purchaser By Instal- ments	Tenant		Other Methods of Occu- pancy (b)	Total Tasmania	
			Govern- mental Housing (a)	Other			
OCCUPIED PRIVATE HOUSES (c)							
Hobart and Suburbs	1954	9,689	4,404	645	5,230	308	20,276
	1961	11,420	8,536	1,398	3,664	294	25,312
L'ton. and Suburbs	1954	5,312	2,013	556	2,865	178	10,924
	1961	6,121	4,184	580	2,015	181	13,081
Other Urban	.. 1954	7,101	1,963	756	3,644	355	13,819
	1961	8,487	4,031	769	3,558	309	17,154
Rural	.. .. 1954	14,808	1,160	914	7,389	1,425	25,696
	1961	15,027	1,846	121	7,404	1,336	25,734
Total Tasmania	1954	36,910	9,540	2,871	19,128	2,266	70,715
	1961	41,055	18,597	2,868	16,641	2,120	81,281

OCCUPIED FLATS

Hobart and Suburbs 1954	286	42	13	1,025	16	1,382
1961	547	142	328	2,040	69	3,126
L'ton. and Suburbs 1954	150	18	3	574	12	757
1961	303	61	8	1,044	34	1,450
Other Urban .. 1954	57	6	5	222	7	297
1961	108	17	25	588	41	779
Rural 1954	26	2	4	61	5	98
1961	48	3	1	153	14	219
Total Tasmania 1954	519	68	25	1,882	40	2,534
1961	1,006	223	362	3,825	158	5,574

(a) In 1954, the Census instruction read "Tenant paying rent to a Government Authority to write 'Tenant (G)'"; in 1961, the Census instruction read "Tenant paying rent to Housing Department to write 'Tenant (G)'".

(b) Includes 'Not Stated'.

(c) Includes houses, sheds, huts, &c. and shared private houses for which only one Householder's Schedule was received.

Unoccupied Dwellings

The following table shows the count of unoccupied dwellings at 30th June, 1961, and classifies them according to the reason for their being unoccupied:

Unoccupied Dwellings at Census of 30th June, 1961, Classified According to Reason for Being Unoccupied

Reason For Being Unoccupied	Hobart and Suburbs	Launceston and Suburbs	Other Urban	Rural	Total Tasmania
For Sale or Renting	233	132	242	655	1,262
Holiday Home, "Week-Enders", Seasonal Workers' Quarters..	31	5	135	3,940	4,111
Occupants Temporarily Absent	393	321	356	795	1,865
To be Demolished, Condemned	33	18	37	116	204
Other and Not Stated	231	91	101	717	1,140
Total	921	567	871	6,223	8,582

Dwellings at Post-Censal Dates

At the time of each Population Census, a count of occupied and unoccupied dwellings is made. As a result of the counts at 30th June, 1954 and 30th June, 1961, the following data concerning dwellings became available:

Number of Dwellings at 30th June, 1954 and 1961

Particulars	Census, 30th June, 1954	Census, 30th June, 1961
Occupied Private Dwellings	77,647	90,198
Occupied, Other Than Private	1,142	1,060
Total Occupied Dwellings	78,789	91,258
Unoccupied Dwellings	5,288	8,582

Data which may be used for estimating dwelling numbers at post-censal dates are as follows:

- (1) numbers of new houses and flats completed (available from quarterly Building Statistics collection);
- (2) numbers of houses and flats destroyed by fire, converted to non-dwelling use, demolished, &c. (available from special collection from local government authorities.)

Private Dwellings at Census of 30th June, 1961 and Post-Censal Movement to 30th June, 1965

Local Government Area and Statistical Division	Private Dwellings at 30.6.61		Recorded Movement in Private Dwelling Numbers from 30.6.61 to 30.6.65	
	Occupied	Unoccupied	New Houses and Flats Completed	Houses and Flats Destroyed, Converted, Demolished or Transferred (Net)
	(1)	(2)	(3)	(4)
Hobart	14,956	507	926	- 331
Glenorchy	8,780	172	1,356	- 31
Total S. Central Div...	23,736	679	2,282	- 362
Launceston	10,846	435	569	- 204
Total N. Central Div.	10,846	435	569	- 204
Burnie	4,151	124	515	+ 4
Circular Head	1,843	110	163	- 11
Deloraine	1,430	110	65	- 10
Devonport	3,865	184	649	- 16
Kentish	1,086	107	50	+ 177
King Island	648	122	30	- 34
Latrobe	1,098	237	147	- 15
Penguin	1,154	58	102	- 45
Ulverstone	2,478	219	299	- 16
Wynyard	2,193	151	251	- 9
Total N.W. Div. ..	19,946	1,422	2,271	+ 25

**Private Dwellings at Census of 30th June, 1961 and Post-Censal Movement to
30th June, 1965—continued**

Local Government Area and Statistical Division	Private Dwellings at 30.6.61		Recorded Movement in Private Dwelling Numbers from 30.6.61 to 30.6.65	
	Occupied	Unoccupied	New Houses and Flats Completed	Houses and Flats Destroyed, Converted, Demolished or Transferred (Net) (4)
	(1)	(2)	(3)	(4)
Beaconsfield	2,357	513	434	— 33
Fingal	1,128	131	26	— 2
Flinders	295	28	37	— 4
George Town	868	364	351	— 4
Lilydale	1,549	87	363	— 4
Portland	373	334	81	— 3
Ringarooma	794	112	29	— 12
Scottsdale	910	227	89	— 3
Total N.E. Div. ..	8,274	1,796	1,410	— 65
Evandale	422	62	19	— 4
Longford	1,694	83	104	— 120
St. Leonards	2,697	113	607	— 3
Westbury	1,261	86	113	— 9
Total N. Midland Div.	6,074	344	843	— 136
Bothwell	331	194	7	— 1
Campbell Town	491	41	17	— 3
Hamilton	950	172	35	— 64
Oatlands	739	72	23	— 4
Ross	186	8	4	— 1
Total Midland Div. ..	2,697	487	86	— 73
Brighton	544	73	18	— 3
Clarence	5,629	623	1,883	— 14
Glamorgan	318	166	74	— 4
Green Ponds	263	27	1	— 2
Richmond	445	48	11	— 5
Sorell	800	698	291	— 3
Spring Bay	326	186	79	— 3
Total S.E. Div. ..	8,325	1,821	2,357	— 34
Bruny	148	150	15	— 3
Esperance	882	208	106	— 4
Huon	1,359	259	60	— 17
Kingborough	2,658	265	261	— 19
New Norfolk	2,199	320	119	— 4
Port Cygnet	666	70	47	— 7
Tasman	300	129	66	— 7
Total S. Div. ..	8,212	1,401	674	— 61
Gormanston	112	18	8	— 3
Queenstown	1,080	43	30	— 14
Strahan	131	44	7	— 3
Waratah	104	14	1	— 4
Zeehan	661	78	21	— 8
Total W. Div. ...	2,088	197	67	— 32
Total Tasmania ..	90,198	8,582	10,559	— 942
Hobart and Suburbs ..	30,174	921	4,170	— 395
Launceston and Suburbs	15,360	567	1,779	— 253
Rest of State	44,664	7,094	4,610	— 294

Limitations of Data: The following explains the limitations of the data in the preceding table for the purposes of estimating the number of occupied private dwellings in each local government area at 30th June, 1965:

Column 1: Includes houses, shares of houses, flats, huts, sheds, apartments and rooms. Each share of a house is counted as one dwelling if a separate householder's schedule was furnished for each shared portion; otherwise a shared house is counted as one dwelling only.

Column 2: Includes principally the same types of dwelling as listed in Column 1. Figures comprise dwellings for sale or rental, "week-enders", holiday homes, seasonal workers' quarters, &c. not occupied on Census night. Beaconsfield, George Town, Portland, Sorell and Clarence are examples of municipalities with a large proportion of week-end and holiday homes.

Column 3: Shows number of new houses and individual flats (in blocks of flats) built. No information is collected to show how many new homes are occupied on a "shared basis" or how many are for permanent occupation, (i.e. no distinction between week-end homes and homes for permanent residence). It does not include small houses valued at under \$1,000 or "temporary" dwellings.

Column 4: (a) Shows numbers as reported by the individual local government authorities. As organised records are not kept in many cases, there may be some understatement.

(b) Huts, sheds, apartments, &c. are excluded.

(c) Definition of terms:

"Destroyed"—i.e. by fire.

"Converted"—i.e. to non-dwelling use, e.g. for office accommodation.

"Transferred"—transfers can occur in two ways: (1) change of municipal boundaries; the figures for Burnie and Penguin reflect a transfer of 40 homes brought about by a boundary change; (2) physical transfer of actual dwelling units, in the main carried out by the Hydro-Electric Commission. Figures for Kentish reflect the largest transfer of this type, the occasion being the movement from the Poatina power development scheme to a new scheme on the north-western rivers; Poatina is in the Longford municipality.

The principal difficulty in calculating a reliable estimate is obviously one of definition in the sense that Census figures emphasise *dwellings* rather than houses, whereas building statistics emphasise *houses* rather than dwellings.

Building Statistics

Scope

In the section that follows, building statistics relate exclusively to the erection of new buildings, including major new additions to existing buildings; construction work such as the building of railways, bridges, earthworks, water storages, piers, wharves, &c. is excluded. Minor additions, alterations, renovations and repairs to buildings are also excluded because of the difficulty of obtaining lists of persons who undertake this work.

When a dwelling is attached to a new building, the whole unit, both in regard to number and value, is classified according to the type of new building (e.g. a new shop and dwelling is classified simply as a shop). Figures for flats include "home units", but not conversions of existing buildings into flats. Number of flats refers to number of new individual dwelling units.

Details obtained from government authorities on their construction programmes and from building contractors refer to all parts of the State. Details for owner-builders cover only those areas subject to building control

by local government authorities; thus, some farm buildings are excluded, but this does not affect the figures materially.

Source of Data

The main statistics relate to building approvals and to building operations (commencements, completions, &c.). The data are derived as follows:

Building Approvals: These comprise (a) approvals by local government authorities for the construction of private buildings; (b) contracts let and day labour projects commenced by governmental authorities; (c) private buildings reported by contractors to have been commenced in certain areas of the few rural municipalities where building regulations do not apply to the whole municipality. Details are compiled monthly.

Building Operations: Returns are obtained from (a) building contractors engaged in the erection of new buildings; (b) owner-builders; (c) Commonwealth, State, local and semi-government authorities. Statistics are compiled at quarterly intervals.

Definitions

Contract-built: Includes the operations of all building contractors and government authorities which undertake the erection of new buildings.

Owner-built: An "owner-built" house is one actually erected or being erected by the owner, or under the owner's direction, without the services of a contractor who is responsible for the whole job.

Commenced: A building is regarded as having been commenced when work on the foundations has begun.

Completed: A building is regarded as having been completed when the contractor has fulfilled the terms of the contract.

Both with "completions" and "commencements", there is some difficulty in maintaining a uniform classification since the definition of an exact point of time in building operations is involved.

Under Construction: A building is so classified if it is uncompleted at the end of the period, whether or not work on it was actively proceeding at that date.

Values: All values shown exclude the value of land and represent the estimated value of buildings *on completion*. In the case of owner-built dwellings, the owner-builder is required to estimate the value from the cost of the materials and the cost of labour, including his own.

New buildings, including dwellings, with an estimated value on completion of less than \$1,000 are excluded from the tabulations.

Building Approvals

The following table shows, for 1964-65, details of building approvals as defined in the section headed "Source of Data"; a distinction is made between "private" and "government", and the information is dissected to give separate figures for Hobart and Suburbs, Launceston and Suburbs and the remainder of the State. In 1964-65, nearly 40 per cent of the total value of building approvals was attributed to Hobart and Suburbs, 15 per cent to Launceston and Suburbs and 45 per cent to the remainder of the State. As far as approvals for new houses were concerned, 50 per cent of the total number was located in the combined Hobart and Launceston *city and suburbs* groupings. The value of approvals for all private buildings accounted for 66 per cent of the State total.

Building Approvals, 1964-65

Particulars	Hobart and Suburbs	Launceston and Suburbs	Remainder of State	Total Tasmania
	No.	No.	No.	No.
New Houses—				
Private	614	374	1,074	2,062
Government	294	53	260	607
Total	908	427	1,334	2,669
Value—	\$'000	\$'000	\$'000	\$'000
New Houses—Private	6,118	3,138	7,196	16,452
Government	1,856	292	1,608	3,756
Other New Buildings (a)—				
Private	5,600	1,712	4,178	11,490
Government	3,500	1,072	6,486	11,058
Alterations and Additions—				
Private	730	312	624	1,666
Government	70	50	330	450
Total Value— Private	12,448	5,162	11,998	29,608
Government	5,426	1,414	8,424	15,264
Total	17,874	6,576	20,422	44,872

(a) Includes flats.

The next table shows building approvals for a five-year period, and for 1955-56, on a State basis:

Building Approvals

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
New Houses—	No.	No.	No.	No.	No.	No.
Private	2,126	1,860	1,910	1,921	2,064	2,062
Government	529	413	617	550	584	607
Total	2,655	2,273	2,527	2,471	2,648	2,669
Value—	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
New Houses—Private	11,754	12,472	12,780	13,328	15,424	16,452
Government	2,950	2,718	3,710	3,214	3,422	3,756
Other New Buildings (a)—						
Private	5,524	8,120	11,608	9,368	7,240	11,490
Government	1,578	5,258	7,766	9,840	6,456	11,058
Alterations and Additions—						
Private	2,470	1,710	1,756	1,472	1,696	1,666
Government	586	260	186	194	282	450
Total Value— Private Govt.	19,748	22,302	26,144	24,168	24,360	29,608
Govt.	5,114	8,236	11,662	13,248	10,160	15,264
Total	24,862	30,538	37,806	37,416	34,520	44,872

(a) Includes flats.

Construction of New Houses

Although building statistics include the construction of shops, factories, offices, hotels, &c., the erection of new houses is possibly the most interesting field because of its social significance. During World War II, the shortage of

materials and manpower virtually brought house construction to a halt, with the result that there was an acute shortage when hostilities ceased; the prosperous state of the economy in the post-war years aggravated the situation by increasing the demand for home ownership.

Government Construction of Houses: The post-war era was notable for the entry of the State Government into the housing field on a large scale; in November, 1945, the Commonwealth Government entered into an agreement with the States whereby it would provide finance for, and the State Governments would undertake the building of, housing projects. Under the agreement, Tasmania received \$5,670,000 which it repaid on withdrawing from the scheme in August, 1950. The Tasmanian Government nevertheless continued to build houses using the resources available from its own Loan Fund; at 30th June, 1965, its aggregate net loan expenditure on housing advances and housing construction totalled \$28,244,000. In 1956, the State Government entered into a new agreement with the Commonwealth, an arrangement renewed with minor modifications in 1961 for a further five years. The aggregate net advances in Tasmania to 30th June, 1965, under the 1956 and 1961 Commonwealth-State Agreements amounted to \$42,952,000. (Advances under the Commonwealth-State Agreements are additional to State net loan expenditure.)

The following table shows, for Tasmania, the number of new houses completed, and distinguishes between those built for government authorities and those built for private persons:

**Number of New Houses Completed From 1950-51
For Government Authorities and Private Persons**

Year	For Govern- ment Authorities	For Private Persons	Total	Year	For Govern- ment Authorities	For Private Persons	Total
1950-51	1,175	2,739	3,914	1958-59	506	2,071	2,577
1951-52	1,133	2,866	3,999	1959-60	443	2,032	2,475
1952-53	883	2,431	3,314	1960-61	473	2,014	2,487
1953-54	716	1,914	2,630	1961-62	547	1,850	2,397
1954-55	720	1,760	2,480	1962-63	563	1,941	2,504
1955-56	729	1,992	2,721	1963-64	554	1,957	2,511
1956-57	585	2,174	2,759	1964-65	579	2,000	2,579
1957-58	611	1,955	2,566				

The proportion of houses built for government authorities has fluctuated between 30 per cent of total houses completed (1950-51) to as low as 18 per cent (1959-60). For each of the three years ended 30th June, 1963 to 1965, the government authorities' proportion has approximated 22 per cent. Statistics of houses completed for government authorities do not fully reflect the effect of government policy since the category "houses built for private persons" includes construction financed, in some cases, by government loans to private persons. Of the \$42,952,000 aggregate net advances made in Tasmania to 30th June, 1965, under the Commonwealth-State Housing Agreements, 28 per cent represents advances to private persons, either through the mechanism of the Agricultural Bank or the Co-operative Building Societies. Similarly, "houses built for private persons" includes those built with advances under the Commonwealth's *War Service Homes Act* where the ex-serviceman has obtained the services of a private contractor or operates as an owner-builder.

The principal construction authority in Tasmania is the State Housing Department but "houses built for government authorities" includes also construction by the Public Works Department for various departments and

authorities, group schemes of the War Service Homes Division and farm houses erected under the War Service Land Settlement Scheme.

New Houses Constructed Since World War II: The next table shows details of commencements, completions, &c., both with regard to number and value in the post-war period:

Construction of New Houses From 1945-46

Year			Commenced		Completed		Under Construction (a)	
			Number	Value (When Completed)	Number	Value (When Completed)	Number	Value (When Completed)
				\$ mill.		\$ mill.		\$ mill.
1945-46	..	..	1,316	2.2	479	0.9	1,013	2.1
1946-47	..	..	1,642	3.7	1,070	2.3	1,557	3.6
1947-48	..	..	2,062	5.2	1,544	3.5	2,065	5.5
1948-49	..	..	2,849	7.9	2,287	6.0	2,575	7.6
1949-50	..	..	3,664	11.7	2,852	8.4	3,357	11.3
1950-51	..	..	4,122	14.9	3,914	13.5	3,558	14.2
1951-52	..	..	3,584	15.3	3,999	16.3	3,143	14.4
1952-53	..	..	2,285	10.6	3,314	15.2	2,114	10.6
1953-54	..	..	2,665	13.2	2,630	13.5	2,149	11.3
1954-55	..	..	2,867	14.6	2,480	12.8	2,536	13.4
1955-56	..	..	2,490	13.6	2,721	14.8	2,305	12.8
1956-57	..	..	2,591	14.8	2,759	15.7	2,137	12.2
1957-58	..	..	2,378	14.5	2,566	15.6	1,949	11.4
1958-59	..	..	2,563	15.5	2,577	15.3	1,935	11.8
1959-60	..	..	2,357	14.9	2,475	15.5	1,817	11.3
1960-61	..	..	2,248	15.1	2,487	16.3	1,578	10.3
1961-62	..	..	2,475	16.3	2,397	15.7	1,656	10.7
1962-63	..	..	2,442	16.0	2,504	16.5	1,594	10.3
1963-64	..	..	2,550	18.4	2,511	17.3	1,633	11.3
1964-65	..	..	2,546	19.5	2,579	19.2	1,600	11.6

(a) At end of year.

The peak year of commencements, in terms of numbers, in the post-war period was 1950-51, and of completions, 1951-52. The housing shortage became somewhat less acute after 1952-53 and completions since then have averaged between 2,500 to 2,600 houses per year.

Material of Outer Walls: The following table shows the number of new houses completed and their classification according to the material used in their outer walls. Until recently, wood has been the predominant material used for outer wall construction but the trend of the last ten years has revealed a growing preference for brick veneer. In 1964-65, for the first time, new houses completed with brick veneer walls exceeded those completed with wooden walls.

Number of New Houses Completed Classified by Material of Outer Walls

Material of Outer Walls	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Brick, Concrete, &c.—						
Solid	418	209	190	231	178	174
Veneer	267	636	720	775	920	1,178
Wood (Weatherboard, &c.) ..	1,934	1,562	1,413	1,426	1,337	1,142
Fibro-Cement	102	80	74	72	76	78
Other .. .. .	..	..	..	..	..	7
Total	2,721	2,487	2,397	2,504	2,511	2,579

Construction of New Houses and Flats

In the following table, details are given of completions of new houses and new flats over a five-year period, and also of corresponding completions in 1955-56:

New Houses and Flats Completed

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
NUMBER COMPLETED						
New Houses—						
Government Ownership—						
Contract Built	373	202	237	288	271	275
Day Labour	356	271	310	275	283	304
Private Ownership—						
Contract Built	830	1,047	1,027	1,086	1,061	1,200
Owner Built	1,162	967	823	855	896	800
Total New Houses	2,721	2,487	2,397	2,504	2,511	2,579
New Flats (Individual Units) (a)	49	175	154	97	164	153
Total New Houses and Flats	2,770	2,662	2,551	2,601	2,675	2,732
VALUE (\$'000)						
New Houses	14,782	16,254	15,718	16,484	17,332	19,216
New Flats (Individual Units) (a)	356	952	912	404	738	844

(a) Individual dwelling units; conversions of existing dwellings to flats are excluded.

Construction of All New Buildings

The previous tables in this section have been concerned with the construction of new houses, or of new houses and flats. In the five years ended 30th June, 1965, the value of houses and flats completed has approximated 50 per cent of the total value of all new buildings completed in each year. The next table shows the value of all new buildings completed in the last five years, and also the corresponding value of completions in 1955-56; the various types of building are specified and houses and flats are included to allow comparison.

Value of All New Buildings Completed (a)—Classified According to Type (\$'000)

Type of Building	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Houses	14,782	16,254	15,718	16,484	17,332	19,216
Flats	356	952	912	404	738	844
Hotels, Guest Houses, &c. ..	146	968	1,412	1,590	370	980
Shops	814	1,646	2,278	868	944	1,216
Factories	4,382	2,882	4,502	5,050	2,844	2,536
Offices	284	2,138	2,080	1,210	2,210	1,246
Other Business Premises ..	1,176	2,082	1,044	2,306	1,866	2,332
Educational	2,142	5,006	2,880	1,956	3,454	2,586
Religious	84	366	418	290	238	308
Health	232	894	820	2,148	2,060	3,272
Entertainment and Recreation ..	348	360	488	826	886	1,008
Miscellaneous	850	480	902	996	1,034	2,200
Total	25,596	34,028	33,454	34,128	33,976	37,744

(a) Includes estimated value of owner-built houses.

The following table gives details of the total value of all new buildings commenced, completed and under construction since 1955-56. A specification of the items included under "all new buildings" appears in the previous table.

Value (When Completed) of All New Buildings (a)
(*\$ million*)

Year	Com- menced	Com- pleted	Under Construc- tion (b)	Year	Com- menced	Com- pleted	Under Construc- tion (b)
1955-56	19.8	25.6	19.7	1960-61	28.3	34.0	25.9
1956-57	28.3	25.2	24.2	1961-62	35.4	33.5	27.8
1957-58	25.5	25.7	23.9	1962-63	34.6	34.1	28.4
1958-59	28.8	26.9	26.1	1963-64	34.7	34.0	29.1
1959-60	36.5	31.6	31.2	1964-65	42.0	37.7	33.5

(a) Includes estimated value of owner-built houses.

(b) At end of period.

The State Housing Department

General

The Housing Department was established in July, 1953, as a separate authority and is responsible for administering that portion of the *Homes Act* 1953 which relates to the acquisition and development of land for housing purposes and the erection of homes for rental and ultimate sale. It also administers the *Homes (Old Age Pensioners') Act* 1940. The principal current source of funds for construction is the Commonwealth Government under the Commonwealth State Housing Agreement. Housing Department construction utilises both day-labour and private contractors to build houses on land developed by the Department. On-site construction is supported by the Department's factory which incorporates joinery works, timber mill, plumbing and electrical workshops, material stores, and garage. Most of the dwellings constructed by the Department are three-bedroom timber dwellings. Roofing is usually corrugated iron, but some coloured asbestos cement sheeting is used. Flats for elderly persons and multi-unit flats have also been constructed.

Department's Construction of Dwellings

During 1964-65, 586 dwellings (houses and individual dwelling units in flats) were completed. The following table shows the aggregate total of dwelling units produced by the Housing Department (and by an earlier State housing construction authority) since 1944:

Aggregate of Dwellings Constructed by State Housing Department
From 1944 to 30th June, 1965 (a)

Type of Dwelling	One Bedroom	Two Bedroom	Three Bedroom	Total
Single Unit—Timber .. ..	..	562	6,844	7,406
Other Material .. ..	..	..	1,108	1,108
Elderly Persons' Flatettes	72	118	..	190
Maisonettes .. ..	..	12	10	22
Multi-unit Flats (Individual Units)	125	157	14	296
Total Dwelling Units	197	849	7,976	9,022

(a) Construction to 30th June, 1953, undertaken by Housing Division of State Agricultural Bank; subsequent construction by State Housing Department.

Dwellings for Rental

Flats, maisonettes and elderly persons' homes are for rental only. With regard to houses, allottees are encouraged to acquire their properties on purchase contract, and a majority take advantage of this opportunity. Some of these dwellings, however, are occupied on a rental basis. The weekly rental of a newly erected three-bedroom timber house in the Hobart and Suburbs area approximated \$11.75 (£5-17-6) in the June quarter of 1965. In certain necessitous cases, rental rebates are allowed and the Department is reimbursed by the State Treasury. Rebates on rentals of elderly persons' flatettes are graduated according to the incomes of the occupiers. Under the current rental rebate formula, a married couple whose only income is the age pension pay \$3.80 (£1-18-0), while a single person solely dependent on the pension pays \$2.00 (£1) a week. (These rates were current in December, 1965.)

Dwellings for Sale

Allotments are made on a no-deposit purchase contract basis with repayments over a maximum term of 53 years, but allottees are encouraged to pay a deposit if they are in a position to do so. Purchase contracts are sometimes surrendered to the Department. Net of surrenders, the aggregate number of purchase contracts entered into by 30th June, 1965, was 5,784. The sale price, excluding land, of a new three-bedroom house in the Hobart and Suburbs area was approximately \$6,900 (£3,450) in the June quarter of 1965. Elsewhere prices tend to be slightly lower.

The weekly repayment instalment for a dwelling under purchase contract is less than the weekly rent of a similar dwelling, as the latter includes a charge for maintenance whereas a person on purchase contract is responsible for the maintenance of the property.

Amounts outstanding in respect of loans made by the Housing Department by way of purchase contracts are shown in the following table:

Housing Department—Purchase Contracts At 30th June

Particulars	1961	1962	1963	1964	1965
Loans Outstanding—					
Number	3,835	4,156	4,427	4,834	5,354
Value (\$'000)	22,634	25,202	27,224	30,220	34,112

The interest rate on contracts signed after 1st May, 1965, was 4½ per cent, immediately prior to which the rate was four per cent. To be eligible for purchase contract terms, an applicant must be married or about to be married, or have dependants for whom it is necessary to provide a home. Number of dependants, income and existing accommodation are considered in determining an applicant's priority.

Agricultural Bank of Tasmania—Advances to Homebuilders*Housing Function*

The Agricultural Bank, as an approved institution under the Commonwealth-State Housing Agreement, receives part of Commonwealth housing funds for advances to home builders. Prior to the commencement of the agreement (1956), the Bank borrowed from the State Loan Fund and from private institutions. To be eligible for a loan, an applicant must be married or about to be married and be over the age of 21 years; he must also own a block of land. The maximum amount of an advance to an applicant is \$7,000 (£3,500) for all

types of houses, provided that the total advance does not exceed 90 per cent of the Bank's valuation of land and dwelling. Advances to borrowers are repayable by equated instalments over 31 years. Advances made to borrowers from 1st July, 1965, were at an interest rate of $5\frac{3}{4}$ per cent, immediately prior to which the rate was $5\frac{1}{2}$ per cent.

The following table shows details for recent years:

Agricultural Bank—Advances for Housing (a)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Advances Approved—					
Number	115	239	157	302	304
Value (\$'000)	724	1,460	972	2,090	2,108
Advances Outstanding (b) (\$'000)	8,390	9,024	9,992	11,244	12,746

(a) Excludes advances to Building Societies.

(b) At end of period.

The Agricultural Bank also acts as agent for the Commonwealth in the transmission of advances under the Commonwealth-State Housing Agreement to the Co-operative Building Societies; details of such advances and of the Building Societies appear in Chapter XI, "Finance".

EDUCATION IN TASMANIA

Introduction

In the section that follows, education will be described under four principal headings:

- (1) Education in Schools, both Government and Non-Government;
- (2) Technical Education;
- (3) Adult Education;
- (4) University Education.

Education in Tasmania over the last decade, in common with that in other Australian States, has been influenced by four major factors: the large increase in the school population, due to immigration and the post-war rise in the birth-rate; the rapid expansion in the demand for secondary education; the pressure on university facilities; and the increased demand for technical education at all levels, from instruction in trades to post-diploma courses. These factors have led to an accelerated building programme; to reviews of the structure of administration; to curriculum revision at all levels; and to experimentation with and development of courses to help satisfy the needs of students, the desires of parents, and the requirements of employers.

Schools, Government and Non-Government

Attendance

Tasmania became, in 1869, the first State in the British Empire to make it compulsory for a parent to educate his child. In 1898 school attendance was made obligatory between the ages of seven and 13, and in 1912, between six and 14. In 1946, Tasmania became the only Australian State to have a school leaving age of 16, and government and private systems of education were

reorganised to provide a minimum of four years of post-primary education. (Government high schools with *restricted entry* had offered five years of secondary education to matriculation standard from 1913.)

The following table shows the dual nature of educational responsibility in Tasmania and gives the numbers of pupils in both government and non-government schools, in primary and secondary grades:

Government and Non-Government Schools
Total Pupils Enrolled at 1st August

Particulars	1954	1960	1961	1962	1963	1964
Government Schools—						
Primary	(a)	46,281	46,537	46,919	47,300	47,840
Secondary	(a)	18,218	19,440	20,707	21,470	21,948
Special (b)	(a)	550	647	720	863	855
Total	52,114	65,049	66,624	68,346	69,633	70,643
Non-Government Schools (c)—						
Primary	(a)	8,048	8,337	8,416	8,444	8,548
Secondary	(a)	4,668	5,099	5,355	5,645	5,837
Total	10,059	12,716	13,436	13,771	14,089	14,385
Total All Schools ..	62,173	77,765	80,060	82,117	83,722	85,028

(a) Not available on comparable basis.

(b) Special, including correspondence, schools but excluding pupils 18 years and over.

(c) At 31st December prior to 1962.

The State (or Government) School System

Introduction

Although earlier governments had made funds available for education, the genesis of the present State (or Government) school system is found in the *Education Act* 1885. In 1882, a Select Committee of the House of Assembly was appointed to enquire into "the system of education in Tasmania and the central control thereof". A new Education Act was passed in 1885, and a Department of Education was established under a Minister of the Crown, with a Director of Education, inspectors and teachers. Aid to non-State schools was abolished and a system of non-sectarian State education was firmly established. The Minister was empowered to regulate the establishment, maintenance and classification of all types of State school, to control staffing, and to make prescriptions concerning the functioning of the schools and the education which they provided.

General Description

Education is secular and compulsory between the ages of six and sixteen. A limited number of exemptions is granted to those who need to leave school before the legal minimum age. No school fees are charged, but parents are responsible for the purchase of books and some other equipment. In cases of need, some assistance may be provided. The educational aim is to provide opportunities for each child to develop according to his age, ability and aptitude, and to the fullest extent that these limits allow.

Denominational instruction is given by visiting clergymen and laymen who are freely entitled to one hour per week with each group of children. No child, however, is compelled to attend religious instruction if his parents object.

Organisation

The Education Department is controlled by a Director who is responsible to the Minister for Education. Superintendents are responsible for specific fields or for the educational administration of districts. Supervisors assist in administration or in the provision of a variety of services to schools. The special sections include the Curriculum Branch; the Teaching Aids Centre; the Speech Education Branch (which assists in speech and drama and provides a speech therapy service); the Research Branch (which assists in educational planning); the Music Branch; the Physical Education Branch; the Guidance and Welfare Offices; and the Schools Library Service. The Department also administers a comprehensive system of free transport for pupils in certain schools by means of bus contracts and subsidises travel for all other pupils beyond a daily cost of eight cents.

Enrolment

The following table shows enrolments in Government schools over a five-year period:

Government Schools Total Number of Pupils at 1st August					
Particulars	1960	1961	1962	1963	1964
Boys	33,743	34,487	35,359	36,249	36,879
Girls	31,306	32,137	32,987	33,384	33,764
Total	65,049	66,624	68,346	69,633	70,643

Finance

The following table gives a summary of Government expenditure on education over a five-year period:

**Expenditure on Education from Consolidated Revenue, Loan Fund and
Trust Funds
(\$'000)**

Details of Expenditure	1959-60	1960-61	1961-62	1962-63	1963-64
From Consolidated Revenue—					
Primary, Secondary and Technical Education—					
Education Department ..	9,721	10,521	11,584	12,543	14,055
Other (Schools Board, Pre-Schools, &c.)	33	25	(a) 107	(a) 135	54
Adult Education	86	90	97	102	111
University of Tasmania (b) ..	704	802	866	895	925
Other Educational Grants ..	1	1	1	1	1
Total	10,543	11,439	12,654	13,676	15,145
From Loan Fund—					
School Buildings, University and Adult Education (c) ..	3,550	4,013	3,771	4,047	4,760
From Trust Funds	523	616	792	858	(d) 1,005

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) Includes expenditure from Commonwealth Employment Stimulation Grant for repairs and maintenance.

(b) Includes Engineering Board of Management.

(c) Includes expenditure from Commonwealth contribution to construction of new University.

(d) Main items in 1963-64 were: University, \$651,802; University colleges, \$46,690; Commonwealth Scholarships, \$146,598; maintenance of school buildings and grounds, \$106,850; and other expenditure \$52,754.

The following table gives a dissection of expenditure from Consolidated Revenue on education in 1963-64:

Expenditure on Education from Consolidated Revenue Fund, 1963-64

Particulars	\$'000
Education Department (a)—	
Salaries, Wages and Allowances for Administrative Staff	445
Salaries, Wages and Allowances for Teaching Staff	10,619
Payroll Tax	277
Maintenance of Schools and Other Properties	210
Lighting, Heating, Water and Sanitary Charges	336
Conveyance and Fares of Scholars	1,335
Materials and Equipment (including Schools Library Service)	400
Other (including Office Requisites, Rents, Rates, Travelling Expenses, Furniture, Allowances, Free Supplies to Scholars, &c.)	433
Total Education Department Expenditure	14,055
Other Expenditure—	
Schools Board	48
Kindergartens and Pre-Schools	6
Adult Education	111
University of Tasmania (b)	925
Other Educational Grants	1
Grand Total	15,145

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) Includes all Technical Education.

(b) Includes Engineering Board of Management.

Age of Pupils in Each Class

The following table summarises the system of government schooling in Tasmania, showing the average ages of pupils in each class according to the type of school available, and the final examinations which determine the types of course followed:

Government Schools

Average Age of Pupils, Primary and Secondary, in each Class and Certificates Issued.

Primary Schools (including Primary Classes of District and Area Schools)			Secondary Schools (including High Schools and Secondary Classes of District and Area Schools)			
Class	Mean Age at 1.8.64		Class	Mean Age at 1.8.64		Certificate Issued
	Years	Months		Years	Months	
Pre-School ..	4	4	1 ..	12	6	..
Kindergarten	4	11	2 ..	13	7	..
1 ..	5	11	3 ..	14	6	(a) Sec. Schools
2 ..	7	2	4 ..	15	5	(a) Schools Board
3 ..	8	2	5 ..	16	8	Matriculation
4 ..	9	3	6 ..			
5 ..	10	3				
6 ..	11	3				

(a) The Secondary Schools Certificate marks the final stage of a self-contained course, and is not a part of the Schools Board Certificate course.

Number of Primary Schools

The following table shows the number of primary and pre-primary schools in the State:

Number of Government Schools Providing Primary Education at 1st August

Type of School	1961	1962	1963	1964
Pre-School	53	53	52	56
Primary School	139	137	138	139
Primary with Secondary Classes (a) ..	19	17	17	15
Special School (a)	12	13	15	14

(a) These figures are also included in a later table on numbers of Secondary Schools.

Pre-School Centres

Pre-school centres are situated in many parts of the State. They are established on the initiative of local associations of parents, and attendance is part-time and optional. A small fee is charged and children between the ages of $3\frac{1}{2}$ and $6\frac{1}{2}$ years may attend. Formal instruction is not given but children are encouraged to take part in a variety of group activities and to engage in constructive play.

The State is only obliged to cater for children over the age of six years, but supports pre-schools because of the value of this type of activity to the personality development and subsequent intellectual growth of the child. Thus considerable parent co-operation and participation are needed. While the teacher has full control of the programme, the local parents initially provide a suitable site to be transferred to the Department. The cost of the building is met by the Department, but half of it is repaid by the parents over a period of years. The Department is responsible for building maintenance (though not for equipment, grounds or garden), and for basic furniture, heating and lighting, and subsidises equipment and supplies on a \$ for \$ basis to a maximum of \$200 in the first year and \$50 thereafter. The local parents provide for telephone accounts, petty cash, recommended equipment, and regular cleaning of the school, and organise daily assistance at each pre-school session.

Most importantly, teachers are paid by the Department, and are under the general control of the Supervisor of Pre-Schools. Some have been trained at the Kindergarten Training College, Kew, Victoria, five graduating in 1963 and three in 1964. (The Kew Course takes three years.) Teachers receive in-service training by observation of, and practice with, other teachers, by group discussions, and by attendance at week-end seminars, as well as receiving supervisory assistance and advice.

The following table shows the number of teachers, teachers in training, and enrolled pupils at the centres:

Pre-Schools—Teachers, Teachers in Training and Pupils at 1st August

Particulars	1961	1962	1963	1964
Teachers (Full-time)	(a)	55	49	54
Teachers (Part-time)	(a)	6	10	7
Teachers in Training (b)	9	10	12	11
Pupils	2,280	2,324	2,279	2,424

(a) Not available as comparable figures.

(b) At Kindergarten Training College, Kew, Victoria.

The high pupil-teacher ratio in the previous table is reduced in practice by attendance of pupils in half-days or on occasional days. Classes do not exceed 25 pupils.

State Primary Schools

State Infants Schools and Infants Classes: Infants schools, and infants classes in all primary schools, cater for children for one, two or three years, depending on facilities available, age at entry, and pre-school experience. Kindergarten classes are provided at some primary schools for children below the age of six who may not have been able to attend pre-school centres.

At the time of enrolment, a medical card is prepared and the School Health Service advises parents of possible defects, such as hearing loss or impaired vision. An improved dental diagnostic and remedial service is to be provided by special nurses, who commenced training in 1966. This activity is described later in this chapter under "Health".

Infants and kindergarten teachers receive special training at the Hobart or Launceston Teachers' Colleges and also may attend in-service training courses. Seminars are occasionally held, and regular departmental supervision is exercised. The dynamic nature of education in these classes is indicated by new developments in the teaching of reading and mathematics (number concept based on the Cuisenaire system was officially introduced in 1964). Considerable experimental work on subject presentation and time allotment is being undertaken.

The following table shows the number of boys and girls in kindergartens and infants classes:

Enrolments in Government Infants Schools and Infants Classes at 1st August, 1964

Pupils	Kindergarten	Class 1	Class 2	Total
Boys	931	5,074	3,760	9,765
Girls	875	4,348	3,518	8,741
Total ..	1,806	9,422	7,278	18,506

General: Some government primary schools in Tasmania have kindergartens attached and some include secondary classes, but the majority have six grades only. The lowest age of entry is five years, but pupils aged six have admission preference. There are no restrictions on entry and parents may select the school they prefer for their children, regardless of the locality in which they live, as long as travelling is not likely to be excessive.

Thirty-five area schools and seven district schools have primary classes, and draw many pupils from outlying localities previously served by one or two-teacher schools. Free transport has made this possible and has led to a reduction in the total number of primary schools.

Curriculum, General: The primary school curriculum has undergone considerable changes in recent years, both in teaching methods and subject matter. The subjects are English (including reading, spelling, oral and written work), history, geography, arithmetic, science, art, music, handiwork, religious and moral education, and health and physical education. Content and

method are non-prescriptive within each course of study. Attention has been concentrated in recent years on the development of concepts and understanding and of powers of observation and inference.

Cuisenaire System: Teachers throughout the world have been looking for new and more effective methods of teaching number. The *Cuisenaire System* was introduced experimentally into Grade I of some Hobart schools in 1961, and, by 1965, was in use in all schools up to Grade III. It is a structured aid made up of coloured rods which a child uses as an introduction to ideas in number and from the use of which there is a gradual transition to concepts of greater complexity. The greater mathematical skill possessed in much shorter time by pupils taught under this method is expected to lead to more effective study in later grades.

Pupil Grouping: Promotion within the schools is generally by age at the beginning of the school year, with accelerated progress or repetition of classes at the headmaster's discretion; grouping is by ability, where numbers allow, with each child being able to work with his equals in each subject, regardless of chronological age. *Differential teaching* adapts the school programme to meet the widely varying needs and abilities of pupils. The skill subjects of reading, writing, spelling and arithmetic are particularly suited to this method of teaching, testing and grading.

Programmed Learning: This can be an aspect of differential teaching and is a form of individual instruction in which a child works at his own rate through a programme. It is a teaching aid which can be either in machine or book form but it does not replace the teacher. It can be used at any level, as long as the child can read, and is particularly useful if he has fallen behind the class, needs revision, or can benefit from deeper study. Programmed learning is available on specified topics, but expense is the biggest obstacle. Fifty classes used this system experimentally in 1964, and results have been promising. It has been said that programmed learning will be to education what the computer has been to industry.

The Cord Cursive Style: This type of writing is now widely taught in the schools. It is a joined cursive script based on rhythmic movements. Letter shapes are streamlined for speed and legibility and are written without thick and thin shading.

Science: The emphasis in the primary science course has been on individual activity and experiment in an attempt to build up an understanding of the methods as well as some of the ideas and facts of science. Simple equipment has been devised for experimental work without introducing undue complexity or expense. The aim is to use facts within a child's experience to develop an active and enquiring mind capable of both observation and inference.

Languages: French has been introduced at one Launceston and one Hobart primary school, with emphasis on its spoken aspects. Much success and enthusiasm have been reported, but a shortage of suitably qualified teachers is a necessary limiting factor to the spread of language work in primary schools.

Music: Instrumental music, for some years taught in secondary classes, is beginning to be taught in some primary schools as staff resources permit. Instruction is given to small groups, but musical appreciation and singing have long been integral parts of the educational programme for pupils in all grades.

Physical Education: This plays a considerable part in primary education as the foundations of most sporting skills are laid at this stage. For younger pupils, playground activities make use of fixed equipment.

Primary Pupils: The following table shows the age and number of pupils receiving primary education in Tasmanian Government schools:

Age and Number of Pupils Receiving Government Primary Education (a) at 1st August

Age Last Birthday (Years)	1960	1961	1962	1963	1964
Under 7	11,778	12,368	12,352	12,580	12,925
7	6,393	6,336	6,635	6,780	6,613
8	6,444	6,345	6,486	6,595	6,944
9	6,234	6,408	6,590	6,352	6,521
10	6,219	6,074	6,342	6,491	6,313
11	5,730	5,882	5,724	5,902	5,959
12	2,952	2,600	2,400	2,252	2,282
13	472	484	353	312	252
14	51	35	34	32	23
15 and Over	8	5	3	4	8
Total	46,281	46,537	46,919	47,300	47,840

(a) Excludes enrolments at pre-schools and special schools.

Government Special Schools and Classes

The Department accepts responsibility for special schools, or special classes in ordinary schools, for mentally retarded children, maladjusted children, those with impaired hearing or speech defects, and those who are blind or partially sighted, or otherwise handicapped.

The type of instruction offered in the various schools and classes differs according to the needs of the children concerned. With those suffering from physical or sensory handicaps, the maintenance of normal or near-normal individual programmes and standards of scholastic performance is an important objective for their successful return to normal school life. Almost half the physically handicapped children suffer from cerebral palsy, whilst most of the rest are disabled by diseases of the bone, poliomyelitis, accidents, allergy and muscular dystrophy. Visual defects include myopia, cataract, albinism and nystagmus. After successful treatment, many pupils are able to enter their local schools at the appropriate grade.

Schools and classes for slow learners and mentally retarded children follow the curricula for pre-schools and primary schools, and no attempt is made to reach examination standards. The teaching of activities and basic skills is the main concern in these classes, which are to be found in most primary schools, and all district, high and area schools.

State Secondary Schools

The following table shows the number of Government secondary schools in the State:

Number of Government Schools Providing Secondary Education at 1st August

Type of School	1961	1962	1963	1964
Primary with Secondary Classes (a)	19	17	17	15
Area	41	36	36	35
District	(b)	6	5	7
High	21	23	25	27
Special School (a)	12	13	15	14

(a) These figures are included in a previous table on numbers of Primary Schools.

(b) Not available on a comparable basis.

All children proceed to some form of secondary school between the ages of $11\frac{1}{2}$ and 13. Where high schools or district schools provide the only local opportunity for secondary education, entry to local pupils is without restriction. Where a choice between a high (or district) school and an area school is available, a transfer committee comprising the district superintendent, the headmasters of the primary and secondary schools concerned, and a guidance officer when necessary, decides the school most suited to each child. Standardised tests are given to each child in Grade VI of the primary school to help committees decide on transfers and to facilitate class and course groupings in the receiving secondary schools. High schools are non-selective, comprehensive and, almost without exception, co-educational.

The distinctions which exist between the various types of secondary school are largely a matter of differences in the curricula which are closely related to the system of examinations. The system comprises three examinations, two of which exist as alternatives, either one taken at the end of third year (the Secondary Schools Certificate) or one at the end of fourth year (the Schools Board Certificate, endorsed "A" or "B", or unendorsed). The third examination, Matriculation, may be taken at the end of the fifth or sixth year.

The following table shows the number of secondary pupils by age, sex and class, in all Government secondary schools and classes:

Secondary Pupils in Government Schools at 1st August, 1964

Age Last Birthday (Years)				Post-Primary Class						Total
				1	2	3	4	5	6	
11	..	..	Boys	168	1	..	..	..	..	169
			Girls	217	1	..	..	..	..	218
12	..	..	Boys	1,650	129	..	..	..	..	1,779
			Girls	1,642	136	1	..	..	..	1,779
13	..	..	Boys	1,327	1,411	76	..	..	..	2,814
			Girls	1,019	1,491	111	1	..	..	2,622
14	..	..	Boys	307	1,318	1,309	56	..	..	2,990
			Girls	193	1,090	1,374	90	..	..	2,747
15	..	..	Boys	43	297	1,200	696	19	..	2,255
			Girls	14	216	943	771	27	..	1,971
16	..	..	Boys	2	24	256	611	192	19	1,104
			Girls	1	10	150	381	224	11	777
17	..	..	Boys	..	..	19	115	122	154	410
			Girls	..	..	6	70	52	75	203
18 and Over	..	..	Boys	..	..	1	8	30	56	95
			Girls	..	..	1	2	2	10	15
Total .. Boys				3,497	3,180	2,861	1,486	363	229	11,616
.. Girls				3,086	2,944	2,586	1,315	305	96	10,332
Grand Total ..				6,583	6,124	5,447	2,801	668	325	21,948

Area Schools

These cater mainly for non-academic children following courses leading to the award of the *Secondary Schools Certificate* after three years by internal examination. There is a bias towards agriculture, technical subjects and home arts, the aim being to provide training for the environment in which the child is likely to find himself on leaving school. The English course is framed to help children write and speak fluently and mathematics is concerned largely with practical examples. There has been an amount of experimental work in these schools, especially in programmed learning, mainly in mathematics.

The Secondary Schools Certificate Course is available to pupils in some primary schools with secondary classes, in all area and district schools, and in all high schools except the two matriculation high schools. In general, pupils intending to proceed to the Schools Board examination are not presented for the Secondary Schools Certificate examination.

Some area schools provide courses leading to the award of the Schools Board Certificate, especially where high or district schools are too far away for pupils to be able to attend them.

Correspondence School

This school offers a wide variety of courses at the primary and post-primary levels, and provides instruction for adults as well as children. Valuable assistance is given to pupils in secondary classes of some primary schools and area schools to prepare them for the Schools Board examinations.

The courses available include all primary and most secondary subjects; matriculation mathematics and history at the advanced and ordinary levels; the University subject of Education for teachers wishing to study externally; advanced English for junior temporary assistant teachers; English for New Australians; and courses for adults with special problems such as illiteracy.

Teacher Training and Recruitment

There is a variety of courses available to trainee teachers in this State. The University of Tasmania awards the Diploma of Education after one year of a post-graduate course, or the Certificate of Education after a two year undergraduate course. The Hobart and Launceston Teachers' Colleges provide two-year courses for primary and infants teachers. A two-year course in physical education and a three-year course in music are obtainable at the University; and courses are available at the Launceston Teachers' College (home arts), the Hobart School of Art, and at the Victorian School of Speech Therapy, the Kew Kindergarten Training College, the Hobart Technical College, &c.

School pupils intending to make teaching their career may become probationary students and receive an allowance during the last two years of their secondary course. These pupils may attend government or non-government schools. Junior Assistant Teachers and Monitors are found in some primary schools with secondary classes. They are usually young women waiting to begin teacher training in the May intake of students.

In the post-primary schools, most teachers are specialists attached to subject departments within each school. In area and district schools, one teacher may take several subjects, and agriculture, cooking and technical subjects are handled by resident or itinerant specialists as available. Many secondary teachers are graduates of the University of Tasmania, but some have been recruited from overseas in recent years, mainly from the United Kingdom. There are shortages of qualified staff in all fields, but especially in languages, mathematics and science. This is an Australia-wide experience.

The following table shows the number of teachers in Tasmanian Government schools at 1st August, 1964:

Number of Government Teachers at 1st August, 1964 (a)

Type of School	Full-time			Part-time		
	Males	Females	Persons	Males	Females	Persons
Pre-School .. .. .	..	54	54	..	7	7
Special	12	62	74	3	4	7
Primary	221	926	1,147	..	54	54
Primary with Secondary Classes..	18	38	56	..	5	5
Area	145	278	423	6	18	24
High and District	738	523	1,261	11	34	45
Teachers' Colleges	18	17	35	..	2	2
Technical Colleges	86	16	102	436	52	488
School of Art	5	2	7	8	2	10
School of Music	1	..	1	..	..	..
Total (a)	1,244	1,916	3,160	464	178	642

(a) Excludes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers, &c.)

In the primary schools in 1964, 83.8 per cent of the teachers were women, and the available men usually taught Grades V and VI. All subjects are taught by each teacher in these schools, but itinerant teachers, when available, take physical education, music and speech classes.

In-service training, seminars and discussion groups are conducted by the Department, and teachers from isolated schools are encouraged to practise and observe at central schools.

The following table shows the number of teachers and teachers-in-training in Tasmania:

Full-time Teaching Staff in Government Schools (a) and Teachers-in-Training
At 1st August

Type of Teacher	1960	1961	1962	1963	1964
Head Teachers—					
Males	222	216	229	226	224
Females	14	8	10	16	17
Other Teachers—					
Males	654	718	798	872	974
Females	1,589	1,492	1,828	1,846	1,885
Monitors—					
Females	61	45	54	58	23
Total Teachers—					
Males (a)	876	934	1,027	1,098	1,198
Females (a)	1,664	1,545	1,892	1,920	1,925
Probationary Students—					
Males	33	48	42	71	67
Females	69	102	72	107	96
Teachers-in-Training—					
Males	154	183	229	221	225
Females	395	380	414	450	529

(a) Includes teachers in non-teaching positions (e.g. curriculum branch staff, guidance officers, &c.) but excludes those engaged in teacher training and technical education.

Bursars have been appointed to some high schools to relieve the teaching staff, and especially headmasters, of some of their clerical work. Laboratory technicians are helping to free science teachers from much non-teaching work. They are employed in some high schools and their number is expected to increase. They maintain, devise, control, and set up equipment.

Government Schools—Miscellaneous Items

Equipment: The Department maintains an active interest in the development of teaching methods and of teaching aids. The Teaching Aids Centre gives assistance to schools by the provision of a library of 16 mm. films, film strips and coloured slides, both imported and made by the Centre. Records are distributed on loan, and are mainly used for music appreciation, poetry and languages. Printed aids, in the form mainly of charts and booklets, are provided (e.g. charts for Cord Cursive writing and booklets for the Cuisenaire system.) Audio-visual aids (tape recorders, film projectors, centralised radio systems, strip and sound projectors, television receivers, &c.) are bought by the Centre and re-sold to the schools to ensure that they qualify for the \$ for \$ subsidy given by the Department. Repair and maintenance of this equipment is done free of charge by the Centre. Specialised electronic equipment has been developed and produced, e.g. auditory training equipment for the schools for the deaf.

Libraries: These have been built up in most schools, with Departmental subsidies matching local funds up to levels determined by the size of the school. The Department's Schools Library Service, with its nineteen thousand volumes, supplements the individual school libraries and circulates a wide variety of reference books on all topics.

Television and Radio Programmes: These are popular, and receivers are found in the majority of schools, with lessons frequently being co-ordinated with the scheduled programmes arranged by liaison between the Department and the Australian Broadcasting Commission.

Road Safety Officers: Police officers visit the schools regularly to give lectures and practical demonstrations. Special efforts have been made to increase the safety of child cyclists, and warnings have also been given on firearms, explosives, dangerous drugs, &c.

Language Laboratories: This educational innovation is now in full use at the Hobart and Elizabeth High Schools (and the University of Tasmania) and laboratories are to be installed at Launceston, Devonport and Burnie High Schools in 1966.

The laboratory consists of a tape recorder and cubicles, with earphones and a microphone in each. A programme gives a constant pattern or series of patterns to illustrate and give practice in the required points. The student hears the explanation and question, gives the answer, hears the correct answer, repeats the correct answer and can have the whole performance played back, while the teacher acts as a monitor to assist individuals if needed. A library of both imported and teacher-prepared records and magnetic tapes is held and a wide range of subject matter, for all types of lessons, is available. Books and printed sheets are used in conjunction with the tapes.

The language laboratory is not a substitute for teaching, but a valuable aid to it. The teacher is able to prepare his own programme or adapt his work to an available programme and tailor it to the specific needs of the group to complement classroom teaching.

Guidance and Welfare: Offices are located in Hobart, Launceston and Burnie, and provide services in all Government and non-Government schools in the State as required. Referrals are accepted from parents, teachers, social workers, doctors and from the children themselves. Most interviews are connected with course choice and planning for the future, but personal problems are also discussed. Personality assessments, home visits and discussions with parents and teachers, arranging of coaching and remedial classes, and a limited amount of vocational guidance are examples of this work. (The Commonwealth Department of Labour and National Service normally handles vocational guidance testing in Tasmania.) Anti-social behaviour, school failure and home-school relationships are investigated, and therapeutic measures are undertaken.

Standardised tests in English, spelling, reading comprehension, speed and accuracy in arithmetic and arithmetic processes and reasoning are administered. These help secondary schools to place their new pupils into classes consistent with their abilities and probable aptitudes in each subject.

Students are tested and selected for bursaries and those entering teachers' colleges are given intelligence, personality and attainment tests. Teachers are helped in planning courses for remedial groups, and surveys on mental retardation and socio-economic structures of particular districts have been done.

Parents and Friends Associations: The main function of these bodies is fund-raising for the provision of subsidised equipment and library books.

Migrant Education: This can be had in evening classes attached to certain schools or by combined radio-correspondence lessons, the aim being the learning of English. The cost of migrant education is reimbursed by the Commonwealth Government.

The School Milk Scheme: Free milk is available to all children under 13 years attending Government and non-Government primary and infants schools, pre-school centres, creches, child-minding centres, and orphanages. One-third of a pint of milk is supplied daily, and the cost is borne by the Commonwealth. In 1964, 428,756 gallons costing \$393,102 were consumed.

Bursaries: A system of bursaries exists to assist pupils in post-primary Government and non-Government schools. Junior bursaries, which may be held for four years, are awarded to pupils under the age of 13 who live in areas where the required type of secondary education is not available. Senior bursaries are awarded on the results of a competitive examination for pupils under 17.

There were 132 junior and 46 senior bursaries held during 1964, at a cost to the Bursaries Board of \$21,686. Forty-three junior and 25 senior bursaries were awarded for 1965. The Bursaries Board fund is made up of moneys from Parliament and donations, and as many bursaries are granted as the state of the fund will permit. Special bursaries may be set up if a donor desires and the Board approves.

Matriculation allowances are also paid to all pupils in fifth and sixth years of post-primary education if parents' income does not exceed \$50 per week (subject to variation if there are additional children.)

Non-Government Schools

General Description

Non-Government schools and teachers have to conform with the regulations of the *Teachers' and Schools' Registration Board*. This Board consists of eight members who hear and determine all applications for registration and

keep a record of all teachers and schools not administered by the Education Department. Every school is graded and every teacher classified to teach either in one or more grades of school or as a special subject teacher. Temporary or student teachers or monitors need not be registered. The Board may prescribe the mode of classifying teachers, the course of study and training required, the examinations to be passed, and the recognition of overseas qualifications. To secure registration, schools must provide for proper access, drainage, light, ventilation and sanitary conveniences, and inspections may be made by officers of the Department. A daily register of attendance has to be kept.

State Assistance to Non-Government Schools

Apart from matriculation allowances and secondary scholarships, benefits include free or subsidised transport; use of the facilities of the Curriculum, Visual Aids, Speech Education and Guidance Branches; attendance at trade and domestic science classes if room is available, and attendance by teachers at Departmental schools of method. Equipment can be purchased at favourable rates through the Supply and Tender Department, and the Schools Library Service can be used.

Independent (or Non-Government) Schools—Enrolment

Independent schools have long played a valuable part in Tasmanian education. Policies are framed by the headmasters in conjunction with their senior staffs and with the approval of their governing bodies or church. There can be freedom to experiment and to develop breadth in courses if desired, and this is shown by the number of subjects available to students.

Most non-Government school pupils are in schools controlled by religious denominations as the next table shows:

Non-Government Schools
Number of Pupils and Number of Schools at 1st August

Particulars	Church of England	Methodist	Presbyterian	Catholic	Seventh Day Adventist	Friends (Quaker)	Un-denominational	All Schools
No. of Pupils—								
1960 (a) Boys	964	5	292	4,233	62	370	111	6,037
Girls	834	348	294	4,574	88	444	97	6,679
1961 (a) Boys	988	5	316	4,542	61	389	106	6,407
Girls	854	363	293	4,867	90	459	103	7,029
1962 .. Boys	954	4	305	4,654	79	421	112	6,529
Girls	884	351	309	5,058	85	452	103	7,242
1963 .. Boys	940	3	274	4,779	91	445	119	6,651
Girls	881	346	331	5,237	75	457	111	7,438
1964 .. Boys	944	11	268	4,933	86	481	103	6,826
Girls	883	353	323	5,364	74	478	84	7,559
No. of Schools 1964 ..	5	1	2	50	3	1	2	64

(a) At 31st December.

Of the 41 schools in 1964 which catered for secondary pupils, 20 had matriculation classes, but only one was co-educational. They have a tradition of comprehensive type schooling, but increased applications for entry have imposed some element of selectivity, involving an entrance examination. Preference is usually given to children of past pupils or brothers or sisters of current pupils.

Most independent school pupils are to be found in primary classes, and most of these are in Catholic schools. The following table shows the ages and numbers of pupils in non-Government primary classes:

Ages and Numbers of Pupils in Non-Government Primary Classes at 1st August

Age Last Birthday (Years)				1960 (a)	1961 (a)	1962	1963	1964
Under 7	..	..	Boys	784	894	912	889	926
			Girls	855	899	1,084	1,048	946
7	..	..	Boys	526	506	555	559	588
			Girls	561	560	585	583	667
8	..	..	Boys	566	546	498	516	496
			Girls	546	605	580	582	610
9	..	..	Boys	491	534	515	511	538
			Girls	617	575	605	584	617
10	..	..	Boys	506	543	581	536	491
			Girls	572	627	587	618	619
11	..	..	Boys	486	487	500	551	507
			Girls	590	615	570	523	633
12	..	..	Boys	328	370	322	377	392
			Girls	336	313	270	306	247
13	..	..	Boys	133	96	113	121	162
			Girls	89	85	70	88	57
14	..	..	Boys	19	31	21	23	27
			Girls	29	23	21	18	21
15 and Over	..	..	Boys	4	4	6	5	4
			Girls	10	24	21	6	..
Total .. Boys				3,843	4,011	4,023	4,088	4,131
.. Girls				4,205	4,326	4,393	4,356	4,417
Grand Total ..				8,048	8,337	8,416	8,444	8,548

(a) At 31st December.

The following table shows the age and grade of pupils in the independent schools at secondary level:

Age and Grade of Pupils in Non-Government Secondary Classes at 1st August, 1964

Age Last Birthday (Years)				Post-Primary Class						Total all Classes
				1	2	3	4	5	6	
11	..	..	Boys	29	..	..	..	..	..	29
			Girls	49	..	..	..	..	..	49
12	..	..	Boys	241	37	..	..	..	..	278
			Girls	387	76	..	..	..	..	463
13	..	..	Boys	241	227	24	..	..	..	492
			Girls	252	356	43	..	..	..	651
14	..	..	Boys	136	241	196	17	..	..	590
			Girls	107	243	366	28	..	..	744
15	..	..	Boys	27	84	228	130	7	..	476
			Girls	10	85	233	292	19	..	639
16	..	..	Boys	17	28	102	195	69	13	424
			Girls	1	19	81	177	146	14	438
17	..	..	Boys	..	2	31	118	51	59	261
			Girls	..	..	4	41	51	47	143
18 and Over			Boys	..	..	2	45	31	67	145
			Girls	..	..	..	2	6	7	15
Total .. Boys				691	619	583	505	158	139	2,695
.. Girls				806	779	727	540	222	68	3,142
Grand Total ..				1,497	1,398	1,310	1,045	380	207	5,837

Technical Education

Government Technical Colleges operate at Hobart, Launceston, Devonport and Burnie and provide professional, technician and trade courses. Part-time students attend classes, providing largely trade work for apprentices, at Queenstown, Rosebery, Smithton, Ulverstone, George Town and Huonville.

Courses

Professional courses provide the theoretical background for the award of a diploma issued by the Education Department. The following table shows the professional courses available, enrolments, and the number who completed courses:

Technical Colleges
Number of Students Taking Diploma and Post-Diploma Courses

Type of Course	1962		1963		1964	
	Total Enrolled (a)	Completed Course	Total Enrolled (a)	Completed Course	Total Enrolled (a)	Completed Course
Accountancy ..	338	10	275	12	557	12
Architecture ..	45	2	54	3	55	2
Art	112	9	99	8	118	13
Building .. ..	..	..	2	..	6	1
Cartography ..	4	..	1	..	..	..
Chemistry	73	4	69	3	60	7
Engineering—						
Civil	72	7	89	4	73	5
Electrical ..	103	5	101	13	99	13
Mechanical ..	70	3	63	2	52	4
Electronics ..	..	..	11	11	3	3
Insurance Institute	..	..	29	4	16	3
Library Association	..	..	..	..	39	7
Management ..	83	..	67	..	139	8
Metallurgy	6	..	14	1	26	2
Modelling and Sculpture .. ..	..	..	..	..	4	..
Pharmacy	45	8	17	11	23	7
Quantity Surveying	5	..	7	2	5	3
Technical Teaching	13	1	11	2	4	1
Town Planning ..	..	..	17	1	8	7
Valuation	13	..	21	3	18	3
Total ..	982	49	947	80	1,305	101

(a) At 1st August.

Technician Courses: These do not aim to reach the standard of the professional courses, nor are they directed towards acquiring skill in a trade. They are intermediate between the two and are designed to meet the needs of industry in which there is a growing demand for technicians. On successful completion of a course, a certificate is awarded by the Education Department. Chemistry, draughtsmanship, health inspection, hotel management, shorthand-typing, and merchandising are examples of the large number of courses available.

Trade Courses: These are designed to complement trade experience and to lead the apprentice to skill in his craft. From 1965, apprentices have been required to attend one full day per week for three years; this has eliminated many evening classes. A certificate of trade proficiency is issued by the Department and courses are available in most trades. Post-trade or journeymen courses are also provided.

The following table shows the number of students who received certificates on successful completion of technician or trade courses, and of preparatory and qualifying courses:

Number of Technician and Trade Students who Completed Courses

Course	1962	1963	1964
Technician and Trade Certificates	646	745	768
Preparatory and Qualifying Examinations (a)	320	303	285

(a) These courses prepare students for Schools Board, Matriculation, public service entry, teachers' and miscellaneous examinations.

Technical Correspondence Courses: These are administered through the Hobart Technical College and are given when attendance at technical classes is not practicable. Approximately 200 apprentices and others utilise these courses.

Rehabilitation Training: This is financed by the Commonwealth Social Services Department to help social service trainees in technical colleges and approved industrial establishments. Further details appear in this chapter under "Social Welfare".

The following table shows the number of correspondence and rehabilitation students in training:

Technical Students in Training—Correspondence and Rehabilitation

Type of Student	1962	1963	1964
Technical Correspondence	(a)	192	236
Rehabilitation	(a)	28	33

(a) Not available.

Technical Education—Miscellaneous

Fees: In 1964, fees were approximately \$30 per year for professional courses and \$12 for certificate and trade courses. Apprentices receive training without charge.

Enrolments: In 1964, technical college enrolments were mostly part-time, comprising 95 per cent of the total enrolment of 7,692. The five per cent of full-time day students attended classes in Art, Pharmacy, Technical Teaching or Day Commercial. Fifty-five per cent of the total enrolment attended the Hobart College and 27 per cent the Launceston College. Thirteen per cent were attempting diploma or post-diploma courses; 34 per cent certificate or post-certificate courses, 44 per cent trade or post-trade courses; and nine per cent miscellaneous subjects. Seventy-three per cent were males and 27 per cent females.

College Councils: These are appointed locally and represent local trades and industries, professions, and municipal councils. They supervise and act as advisory bodies.

State Advisory Committees advise the Technical Education Board on the scope and details of syllabuses and matters connected with various professions or trades. They consist of nominees of employers' and employees' associations, and Government nominees.

Examinations: These are conducted by the Education Department in November each year and restricted supplementary examinations are held in February. Papers are set and marked, or assessments carried out, by outside examiners.

Technical Teachers, Students and Expenditure

The following table shows the numbers of schools, teachers and students engaged in senior technical education, and the yearly expenditure:

Technical Education—Teachers, Students and Expenditure

Particulars	1960	1961	1962	1963	1964
Schools (a) (No.)	11	12	11	10	9
Teachers—Full-time .. (No.)	111	97	95	90	102
Part-time .. (No.)	413	383	414	449	488
Students—Aggregate (b) (No.)	7,565	6,499	6,746	7,587	7,692
Expenditure (\$'000)	616	669	609	823	862

(a) Includes school buildings in which Senior Technical classes are provided as well as Technical Colleges.

(b) *Gross* number enrolled during the year.

Examinations

This section deals with certificates and examinations affecting pupils of Government and non-Government secondary schools.

The Schools Board Certificate

This is awarded after a four-year secondary academic course. Subjects may be taken at various levels and a wide choice is available, to cater for different levels of ability or interest. Compulsory basic subjects are complemented by optional subjects to permit concentration on interests, without undue specialisation at this stage. Examinations may be internal (in accredited schools) or external (set by the Schools Board of Tasmania.) The Certificate may be issued endorsed "A" or "B", or unendorsed. The "A" certificate requires a pass in English among other subjects; the "B" certificate is less restricted in specification of required subjects.

A number of pupils who are either unable to attain the standard required by any of the examining bodies, or who do not wish to acquire a certificate, may follow a non-certificate secondary course, which is similar to that for the Secondary Schools Certificate (described earlier under "Area Schools"). Below this level in all schools is at least one special non-examination class for slow learners, who follow a curriculum designed by the Superintendent of Research and Special Education and the district superintendent for that school.

The Matriculation Examination

This is taken at the end of the fifth or sixth secondary year, individual subjects being attempted at the Advanced or Ordinary level. Examinations are conducted by the University of Tasmania and are held in December. A candidate may matriculate at the one examination or, if he chooses, at two examinations held in consecutive years. Supplementary examinations are also held in February. At least three subjects at Advanced level and two at Ordinary level, in certain groupings, are required. Study of subjects outside his specific specialist field of interest is compulsory for a candidate.

Government schools with matriculation classes include the High Schools at Launceston, Devonport and Burnie, whilst a unique Australian institution, the Matriculation High School at Hobart, taught only matriculation students

for the first time in 1965 (junior students were not enrolled after 1960). Launceston High will reach this stage in 1967. In the Matriculation High Schools, greater freedom of approach is possible and students, benefiting from the change in teaching technique, are better able to make the transition between school and university. Subsidised transport and a system of hostels assist many pupils studying for matriculation.

Although it is a five-year secondary course, there is a pronounced tendency for students to aim at matriculation after six years' study, and to regard the fifth year examination either as a trial effort or as the first stage of the complete course.

Examination Results

The following table shows the number of students attempting the Schools Board and Matriculation examinations, and percentages who satisfied the examiners:

**Schools Board and Matriculation Examination Results
Government and Non-Government Schools**

Particulars	1960	1961	1962	1963	1964
Schools Board Certificate—					
Total examined .. (No.)	2,309	2,731	3,392	3,982	4,182
Attempted Certificate .. (No.)	1,929	2,039	2,904	3,185	3,368
Gained Certificate (a) .. (No.)	1,202	1,207	1,589	1,642	1,800
Pass Rate (b) (%)	62.66	59.45	57.82	51.67	53.44
Matriculation Examination—					
Secondary Schools Students—					
Total Examined .. (No.)	781	829	940	1,292	1,561
Attempted Matriculation .. (No.)	717	748	650	837	968
Matriculated (No.)	366	355	319	462	563
Pass Rate (b) (%)	51.04	47.46	49.08	55.12	58.16
Non-Secondary School Students					
Matriculated (No.)	14	20	22	28	44

(a) Refers to Schools Board Certificate endorsed "A".

(b) Successful proportion of those attempting to obtain the full qualification.

Adult Education

Courses: Classes and lectures form the core of the Government adult education programme. Consisting usually of ten meetings each, the courses cover a wide range of subjects, including languages, literature, drama, philosophy, psychology, science, geology, navigation, art, music, creative writing, public speaking, animal and plant breeding, garden management, mechanics, home arts, crafts, and film appreciation. About 600 of these courses, conducted by about 300 part-time tutors, are held each year.

Organisation: The Adult Education Board has a full time Director, and eight Regional Officers. There are two permanent centres in Hobart, one with an auditorium suitable for major lectures and exhibitions, and seating about 300. There are adult education or community centres in Launceston, Devonport, Burnie and Smithton, and a residential college for short term courses, on lease from the National Trust, at Campbell Town ("The Grange").

Classes: Most classes are held in the evening, but some in home arts are held during the day. The standard of the courses ranges from the very elementary to advanced levels. Special lectures by well known speakers are arranged from time to time, particularly in the fields of international affairs, literature and science. In 1963-64, 209 of these were arranged and were attended by more than 27,000 people.

Seminars are arranged in a wide range of topics. Some of these are in fact refresher courses and are often organised in conjunction with professional bodies, e.g. in the fields of town planning, education, and industrial psychology. The Executive Seminar in Business Administration is of one week's duration.

Remote Areas: No correspondence courses are conducted by the Board, but for those living in isolated places, encouragement is given to the formation of discussion groups and a recorded lecture service frequently illustrated by slides is provided. Notes on books, their literary qualities and the ideas presented in them help to maintain adult education services in the more remote areas.

Drama: This is fostered by the provision of producers, equipment and advisory services. As well as raising standards of production and acting, the aim is to train audiences to appreciate live theatre productions, and drama companies such as the Young Elizabethan Players tour each year.

Music: This includes open air concerts, concerts of recorded music, lunch hour recitals in the State Library and Art Galleries, and tours of country districts by individual musicians and groups.

Art: An open air art exhibition is held each summer in Hobart and Launceston and special exhibitions of the work of Tasmanian and other Australian artists are occasionally held. Travelling exhibitions are also arranged.

Residential School: An important part of the Board's work is the Summer School held in Hobart, when the main subject is in the field of international affairs. Separate schools in the arts are also held and about 20 short-term schools are arranged throughout the State during the year. This number is expected to increase substantially when the residential college is working fully.

The following table shows the annual expenditure on adult education:

Expenditure on Adult Education
(£'000)

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
Adult Education (excluding Loan Fund expenditure)	86	90	97	102	111

University of Tasmania

History

The University of Tasmania was founded in 1890, and was the fourth to be established in Australia. Teaching began in 1893 with three lecturers and six students on four acres of land in the Queen's Domain at Hobart.

Growth of the University was slow for the first half century, despite the State's progressive policy in education generally. The Faculties of Arts, Science and Law were originally established, with Commerce added in 1919 and Engineering in 1922. At the outbreak of World War II, the teaching staff in many departments consisted of one full-time professor or lecturer, possibly with part-time assistants.

After the war, the influx of ex-servicemen filled all Australian universities to capacity. Student enrolments in Tasmania rose to 740 in 1947, and the rising birth rate during and since the war, and the increased desire of adolescents to receive a university education have further increased student numbers.

Financial assistance from both State and Commonwealth Governments enabled the staff to be almost doubled between 1945 and 1950. Research funds became more plentiful and energetic research schools developed, aiming

at the advancement of knowledge and the training of post-graduate students. A Faculty of Education was established with responsibility for some of the State's teacher training. New chairs in such subjects as psychology, geology, botany, zoology and political science were created. In 1957 came the Murray Report on the Australian Universities, leading to a significantly increased flow of Commonwealth money into Australian universities generally. It also led to the decision to found Faculties of Agricultural Science and Medicine in Tasmania.

New Site

A new site at Sandy Bay was chosen in 1944. Army-type huts were erected to accommodate temporarily the rapidly growing science departments. The first permanent building was occupied in 1957 and rapid development has followed, with Commonwealth assistance in financing the building programme.

The following table shows the number of teaching staff and students in selected years:

University Teaching Staff and Students Enrolled

Particulars	1945	1955	1960	1961	1962	1963	1964
Teaching Staff (Full-time)							
Professors	12	15	20	19	19	19	19
Others	31	82	88	91	101	108	112
Total Staff ..	43	97	108	110	120	127	131
Individual Students Enrolled	503	800	1,332	1,460	1,572	1,691	1,863

Constitution and Administration

The senior academic body is the Professorial Board which includes the head of every University teaching department and the faculties, boards and committees are subject to it.

The following table shows the teaching staff and courses in which students were enrolled in 1964:

University Staff and Enrolments, 1964

Teaching Staff (Full-Time)		Student Enrolments Gross (a)			
Particulars	Number	Course	New Enrolments 1964	Total Enrolments	
				Males	Females
Professors	19	Arts	191	297	323
Associate Professors and Readers	11	Science	135	305	56
Senior Lecturers and Lecturers	80	Law	22	86	8
Assistant Lecturers ..	21	Economics/Commerce	55	148	13
		Engineering	59	151	5
		Education	104	183	166
		Other (b)	59	181	32
Total ..	131	Total ..	625	1,351	603

(a) Includes those taking one or more subjects not necessarily as part of a degree, diploma or certificate course. Students enrolled in more than one course are shown in each course for which enrolled.

(b) Includes students studying for higher degrees.

The governing body of the university is the Council, consisting of four members appointed by the teaching staff, four by the graduates through Convocation, one by the undergraduates, two by the two Houses of Parliament, four by the Governor, and three by the Governor on the recommendation of the Council. The Director of Education is an ex-officio member. The Chancellor is chairman, as he is constitutionally and ceremonially the senior member of the University. The chief executive officer is the Vice-Chancellor. Graduates are represented in University affairs through Convocation, every graduate being qualified as a member of this body.

Degrees Conferred

The following table shows the degrees conferred since 1955:

University of Tasmania—Degrees Conferred (a)

Degree (b)	1955	1960	1961	1962	1963	1964
M.A. Males	1	..	1	3	2	2
Females	2	1	..	..	..	..
B.A. Males	10	36	26	33	40	42
Females	12	28	26	30	37	50
M.Sc. Males	1	1	..	1	4	..
Females	..	1	..	..	1	..
B.Sc. Males	14	36	31	35	48	44
Females	5	3	10	5	6	10
LL.B. Males	3	9	8	10	6	13
Females	3	..	..	..	1	1
B.Com./B.Ec. .. Males	6	14	20	14	21	11
Females	..	1	1	1	1	..
B.E. Males	9	9	8	10	20	18
Females	..	..	..	..	..	..
Other Males	5	4	9	..	5	8
Females	..	1	..	1	..	..
Total Males	49	109	103	106	146	138
Females	22	35	37	37	46	61

(a) Excluding honorary degrees.

(b) Bachelors' degrees include bachelors' degrees with honours.

Finance

The following table shows the income and expenditure of the University of Tasmania for 1964:

University Income and Expenditure (a) 1964

Income	\$'000	Expenditure	\$'000
State Government Grant ..	1,183	Teaching and Research ..	1,656
Commonwealth Govt. Grant	895	Administration and General ..	232
Other Grants and Donations ..	90	Libraries	134
Student Fees	289	Building and Grounds—Main-	
Halls of Residence	77	tenance	166
Other	54	Other	161
Total	2,589	Total	2,349

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) This statement refers only to current income and expenditure. An additional amount of \$646,036 met from State Loan Fund was expended on new buildings and major alterations and additions in 1964.

The next table summarises income and expenditure over a five-year period:

University Income and Expenditure—Summary
(\$'000)

Particulars	1960	1961	1962	1963	1964
Income—					
Government Grants (a) ..	1,401	1,450	1,631	1,592	2,077
Other	210	265	401	371	511
Total Receipts ..	1,611	1,715	2,032	1,964	2,589
Expenditure—					
Total (b)	1,564	1,812	1,992	2,029	2,349

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) State and Commonwealth.

(b) Excludes expenditure on new buildings and other capital works.

Residential Colleges

There are four residential colleges in the University. Christ College was affiliated with the University in 1933, moved to new premises at Dynnyrne from the Domain in 1962 and provides accommodation for 75 students. It still caters for a few Anglican theological students. Hytten Hall was opened in 1959, largely through the efforts of Professor Hytten, and accommodates 120 students. St. John Fisher College was opened in 1962, accommodates 33 students and is under the direction of the Catholic Church. Jane Franklin Hall was founded by the Tasmanian Council of Churches in 1950 as a hall of residence for female students attending the University.

Buildings

By 1965, the faculties of Arts, Commerce, Education, Science and Engineering were mainly housed in permanent buildings, and others have been completed for the Library, the Union, and the administrative staff. Projects for the immediate future include buildings for the Law, Medicine and Agricultural Science faculties, a Great Hall and a gymnasium. Most of the present teaching buildings will have to be extended to accommodate increases in student numbers.

Future Plans

The development of the Medical School will be the University's major project for some time to come, needing one building at the University for the teaching of anatomy, physiology and biochemistry, and a clinical building on the site of, and linked with, the Royal Hobart Hospital.

Further development is required for the Faculty of Agricultural Science and the Computer Centre. This Centre is a joint project with the Hydro-Electric Commission, a computer being installed in 1964 to service both University and Hydro-Electric Commission requirements.

Commonwealth Office of Education

Because of the rapidly growing commitment of the Commonwealth Government in education, a Branch Office of the Commonwealth Office of Education was re-established in Hobart in November, 1964. Its functions are:

Sponsored Training

Education Officers give professional guidance and advice to the sponsored students training in Tasmanian educational institutions under Australian Government scholarships (the Colombo Plan, Special Commonwealth African Aid Programme, Commonwealth Co-operation in Education and other schemes). The number of full-time sponsored students studying at the University of Tasmania has increased from nine in 1961 to 81 in 1965 and is expected to reach 135 in 1966.

Commonwealth Scholarships

University Scholarships are awarded each year on the results obtained in the Matriculation Examination. The State Education Department acts as agent for the Commonwealth in the administration of the scheme. In 1965, the quota was 170 and in 1966, 200. Scholarships in excess of the quota are awarded to allow for students who "drop out".

In 1964, two new Commonwealth Scholarship schemes were introduced.

- (a) Under the Commonwealth Secondary Scholarship Scheme, each year 331 Tasmanian students are awarded a two-year scholarship to assist them to study for the matriculation examination. Each scholarship is worth a maximum amount of \$400 per year and a minimum of \$250 a year (components being \$200 living allowance, \$50 book allowance and \$150 school fees, if paid).
- (b) Under the Commonwealth Technical Scholarship Scheme, a quota of 83 scholarships is available annually to Tasmanian students to assist them to take approved full-time or part-time technical college and art school courses, and approved full-time courses in music and agriculture. Full-time students are paid a maximum of \$400 and a minimum of \$250 per year, and part-time students \$100 a year plus tuition fees.

During 1965, a further scheme was introduced. The Commonwealth Advanced Education Scholarship Scheme, as it is known, provides assistance to students taking approved courses of advanced education in Australia. In Tasmania, 33 scholarships will be offered in 1966 to assist students taking diploma courses at a technical college, the certificate course conducted by the Pharmacy Board and teacher training courses at Education Department Teachers' Colleges. Under this scheme, all compulsory fees are paid and a maximum allowance of \$520 per annum for a scholar living with his parents, or \$793 per annum for a scholar living away from his parents, is payable subject to a means test.

Other Responsibilities

Apart from the major commitments in Sponsored Training and Commonwealth Scholarships, the Hobart Branch Office has other responsibilities concerned with international relations in education (Unesco), research of an educational nature, liaison with the State Education Department and language research. It also provides the secretariat for the Tasmanian Council for Overseas Students, a body which seeks to co-ordinate the activities of Tasmanian organisations concerned with the general welfare of overseas students, both sponsored and private, in this State.

SOCIAL WELFARE

Commonwealth Department of Social Services

Commonwealth activity in social services began in 1909 with the passage of the *Invalid and Old Age Pensions Act*. This and the *Maternity Allowances Act* were administered by the Department of the Treasury until 1941 when the Department of Social Services commenced to function as a separate organisation. Later, the functions of the Department were widened with the passing of the *Child Endowment Act*, the *Widows' Pensions Act* and the *Unemployment and Sickness Benefits Act*. A referendum held in 1946 empowered the Commonwealth to legislate for the provision of certain social services formerly provided by the States. In 1947, a consolidated *Social Services Act* was passed. The Department also administers the *Aged Persons Homes Act* and the *Disabled Persons Accommodation Act* and co-operates with the Commonwealth Department of Health in the administration of the *National Health Act*.

The following table shows expenditure in Tasmania from the National Welfare Fund on benefits under the *Social Services Act*. The most noticeable fluctuations occur in expenditure on unemployment benefits.

Commonwealth Welfare Services Payments
(\$'000)

Benefit or Service	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Age and Invalid Pensions ..	6,900	10,101	11,404	11,717	12,343	13,184
Child Endowment (a) ..	4,569	5,484	4,993	5,045	6,113	6,306
Rehabilitation Service ..	31	44	50	39	44	60
Funeral Benefits ..	19	22	23	24	25	26
Maternity Allowances ..	273	296	289	277	272	252
Widows' Pensions ..	537	940	1,037	1,084	1,467	1,698
Unemployment Benefits ..	20	229	696	783	750	583
Sickness Benefits ..	102	134	163	203	215	201
Special Benefits (b) ..	27	39	38	44	52	52
Total ..	12,479	17,288	18,694	19,216	21,281	22,363

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) In 1955-56 and 1963-64, five twelve-weekly payments were credited directly to bank accounts instead of four. In 1960-61, endowment payable on 4th July, 1961, was brought to account in 1960-61.

(b) Includes payments to migrants.

Description of Pensions, Benefits, &c.

In the section that follows, a description is given of the various pensions, benefits, &c. The rates and conditions for each include any changes introduced by amending legislation subsequent to the Federal Budget on 17th August, 1965.

Age and Invalid Pensions

Age pensions were introduced by the Deakin Government in 1909 and invalid pensions by the Fisher Government in 1910. They are payable to British subjects either natural-born or naturalised, who have been resident in Australia, New Zealand or the United Kingdom for 10 years in the case of age pensioners, and five years in the case of invalid pensioners. (Reciprocity agreements exist with New Zealand and the United Kingdom.)

The qualifying ages for age pensions are 65 years for men and 60 years for women; invalid pensions are payable to persons over 16 years of age who are permanently incapacitated for work. Additional allowances are payable for dependants under certain conditions.

For age and invalid pensions, the same means test on income and property operates. "Means" can consist entirely of income, entirely of property, or any combination of them. The calculation of income excludes the pension itself, income from property, gifts from family, benefits from hospital and medical insurance schemes, child endowment, &c.; the property component excludes home, furniture, personal effects, the first \$400 of property and \$1,500 surrender value of life policies, and the capital value of any life interest, annuity or contingent interest, &c. Blind persons, however, may receive the maximum rate of pension free of means test.

The maximum standard rate of age or invalid pension is \$624 a year (\$12 a week) for a single, widowed, separated or divorced person; the maximum married rate is \$1,144 a year (\$22 a week). A single pensioner with *means as assessed* between \$364-\$988 receives pension reduced on a sliding scale; for a married couple, each a pensioner, the range is \$728-\$1,872. (Pension ceases when either the \$988 or \$1,872 level is exceeded.) The existence of dependants causes variations in assessments and in amounts paid.

Supplementary assistance of up to \$2 a week is payable to age or invalid pensioners who pay rent and whose *means as assessed* do not exceed \$52. This assistance is reduced by the amount of means in excess of \$52.

Free medical service and medicine are provided for pensioners and their dependants, and a concessional telephone rental equal to two-thirds of the amount otherwise payable is available to blind people, pensioners who live alone, and to certain others. Radio and television licences at a reduced rate are also available to these pensioners.

If an invalid pensioner is earning income, the question of permanent incapacity for work is reconsidered. Employment is not necessarily inconsistent with permanent incapacity and each case is determined on its merits.

A wife's allowance of \$312 a year (\$6 a week) may be paid, subject to the means test, to a non-pensioner wife, and is reduced by *means as assessed* over \$364. A child's allowance of \$78 a year (\$1.50 a week) may be paid, free of means test, for one child, and subject to means test for each other child. A guardian's allowance of \$208 a year (\$4 a week) is payable, subject to means test, to widowers and other unmarried pensioners with one or more children.

Pensions are paid fortnightly, either by cheque posted to the pensioner's address or in cash at a nominated post office.

Widows' Pensions

These were introduced by the Curtin Government in 1942. They are payable to British subjects, natural-born or naturalised, who have been resident in this country, New Zealand or the United Kingdom for five years before claiming a pension, or for one year if the woman and her husband were living permanently in Australia before he died. The classes of widows are as follows: (i) a Class A widow has one or more dependent or student children in her care; (ii) a Class B widow is at least 50 years of age, or 45 years when her Class A pension ceases (because she no longer has a child in her care); (iii) a Class C widow is under 50, without children, and in necessitous circumstances in the 26 weeks following her husband's death. The term "widow" includes a deserted wife, a divorcee, a woman whose husband has been imprisoned for at least six months or if he is a patient in a mental hospital. Certain "dependent females" may also qualify for pension. Women ineligible for pension include aliens, those receiving war widows', age or invalid pensions, and deserted wives or divorcees who have not taken reasonable steps to obtain maintenance from husbands or former husbands.

The maximum rate of widows' pensions are as follows:

Class A—\$832 a year (\$16 a week) plus \$1.50 weekly for each qualifying child;
Class B—\$559 a year (\$10.75 a week); Class C—\$10.75 a week.

There is no specific means test for Class C pensioners, the decision on "necessitous circumstances" being at the discretion of the Director of Social Services; if the widow is expecting a child, payment continues until the birth, when she may qualify for a Class A pension. A means test on income and property for A and B class pensioners operates. Widow pensioners are also eligible for the pensioner medical service, supplementary assistance in event of extreme hardship, concessional radio and television licence fees and telephone rentals.

The following table shows, for Tasmania, the number and sex of persons receiving age, invalid and widows' pensions since 1955-56, and the amounts paid out in pensions and allowances:

Age, Invalid and Widow Pensioners and Payments

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Age and Invalid Pensions—						
Number of Age Pensioners (a)—						
Males	4,585	5,256	5,548	5,572	5,779	5,799
Females	9,489	11,296	11,974	12,188	13,024	13,093
Persons	14,074	16,552	17,522	17,760	18,803	18,892
Number of Invalid Pensioners (a)						
Males	1,275	1,779	1,822	1,844	1,966	2,055
Females	1,321	1,559	1,477	1,499	1,397	1,477
Persons	2,596	3,338	3,299	3,343	3,363	3,532
Amount of Pensions Paid (\$'000)	6,900	10,101	11,404	11,717	12,343	13,184
Widows' Pensions—						
Number of Pensioners (a)	1,419	1,849	1,912	1,977	2,109	2,248
Amount of Pensions Paid (\$'000)	537	940	1,037	1,084	1,467	1,698

(a) At 30th June.

Budget of August, 1966

New weekly pension rates announced in the 1966 budget included: age and invalid, \$13; married, \$23.50; widows' A, \$17; widows' B and C, \$11.75.

Unemployment, Sickness and Special Benefits

Legislation for these benefits was introduced in 1944 by the Curtin Government and payments began in 1945. The minimum age is 16 years, the maximum 65 (male) and 60 (female). There are no nationality restrictions, but if a claimant has not been resident in Australia for one year before making the claim, the Department must be satisfied that he intends to live here permanently. Benefits are not payable to people qualified to receive invalid, age, widows' or service pensions, or tuberculosis allowances.

To receive unemployment benefit, a person must be out of work (but not through being a direct participant in a strike); must be capable of undertaking and willing to undertake suitable work; and have taken reasonable steps to obtain employment. Registration with the Commonwealth Employment Service is evidence of this, but payment is still at the discretion of the Department of Social Services.

Sickness benefit may be given to a person temporarily incapacitated for work because of sickness or accident, and who has suffered a loss of income because of this.

A special benefit may be granted to a person not qualified for an unemployment or sickness benefit if, because of age, physical or mental disability, domestic circumstances, or for other valid reasons, he is unable to earn a sufficient livelihood for himself and his dependants.

The maximum rate of unemployment, sickness and special benefit payable is \$8.25 weekly for an adult or married minor, plus \$6 for a dependent spouse (or unpaid housekeeper if one or more children are maintained), and \$1.50 for each dependent child under 16 years; unmarried minors receive either \$3.50 or \$4.75 a week, according to age. A means test operates which allows a maximum income of \$4 a week, or \$2 in the case of minors. If the claimant's income from other sources (with exclusions such as child endowment, war pension and reimbursements from registered health or benefit organisations) exceeds the maximum, the benefit is reduced by the amount of the excess. The spouse's income can cause reduction or elimination of additional dependant's benefit.

Unemployment benefit is payable from the seventh day after the day on which the claimant registered for work, or the seventh day after the date of lodgement of claim, whichever is the later. Sickness benefit is payable from the seventh day after the day on which the claimant became incapacitated for work, provided a claim is lodged within thirteen weeks from the date of incapacity. Benefits are paid weekly by cheque, posted to the beneficiary's address.

The following table shows, for Tasmania, the unemployment, sickness and special benefits granted, and the expenditure on each, from 1955-56:

**Commonwealth Unemployment, Sickness and Special Benefits
Beneficiaries and Payments**

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Unemployment Benefits—						
Claims Granted .. (No.)	454	3,995	8,273	7,141	6,720	5,255
Persons on Benefit—						
At 30th June .. (No.)	71	1,336	1,778	1,777	1,399	926
Weekly Average .. (No.)	58	549	1,541	1,497	1,435	1,117
Benefits Paid (\$'000)	20	229	696	783	750	583
Sickness Benefits—						
Claims Granted .. (No.)	1,950	1,894	2,000	2,099	2,167	2,238
Persons on Benefit—						
At 30th June .. (No.)	241	269	304	303	289	272
Weekly Average .. (No.)	229	250	262	301	300	287
Benefits Paid (\$'000)	102	134	163	203	215	201
Special Benefits (a)—						
Claims Granted .. (No.)	115	102	93	111	135	122
Persons on Benefit—						
At 30th June .. (No.)	95	108	95	103	129	120
Weekly Average .. (No.)	100	114	96	102	118	116
Benefits Paid (\$'000)	27	39	38	44	52	52
Total Benefits—						
Total Claims Granted .. (No.)	2,519	5,991	10,366	9,351	9,022	7,615
Persons on Benefit—						
At 30th June .. (No.)	407	1,713	2,177	2,183	1,817	1,318
Weekly Average .. (No.)	387	913	1,899	1,900	1,853	1,520
Total Benefits Paid .. (\$'000)	149	401	897	1,030	1,017	837

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) Excludes special benefits to migrants in accommodation centres.

Funeral Benefits

These were introduced by the Curtin Government in 1943 and provide for a payment of \$20 or the actual costs of the funeral, whichever is less, following the death of an invalid or age pensioner, of a tuberculosis sufferer otherwise qualified to receive a pension, or of a person who, but for his death, would have been granted an age or invalid pension. The amount is increased to \$40 where the claimant is himself a pensioner, or if the payment is in respect of a pensioner's wife or child.

Maternity Allowances

Maternity allowances were introduced by the Fisher Government in 1912. Any mother is entitled to a maternity allowance if she gives birth to a child in Australia and if she resides or intends to remain in Australia. It may also be paid if the birth is on board a ship proceeding to Australia, but not if the mother is entitled to a similar benefit from another country. Under certain conditions, a woman is eligible if she is temporarily absent overseas. A woman who is an alien may qualify if she or her husband lived in Australia for at least a year before the birth; alternatively, the allowance may not be paid until a year after her arrival.

The lump sum payment depends on the number of other children under 16 (or student children under 21) the mother has in her care. Payment is \$30 where there are no other children; \$32 where there are one or two other children and \$35 where there are three or more. The amount is increased by \$10 for each additional child in a multiple birth. \$20 of the allowance may be paid four weeks before the birth, and the balance soon after. It is paid by cheque, posted to the mother's address, and there is no means test involved.

The following table shows payments in Tasmania since 1955-56:

Maternity Allowances

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Claims Paid During Year (No.)	8,328	9,077	8,942	8,560	8,437	7,821
Amount Paid During Year (\$'000)	273	296	289	277	272	252

Child Endowment

Child endowment was introduced by the Menzies Government in 1941, and is paid to persons or institutions having the care, custody and control of children under 16 years, or student children under 21. One year's residence in Australia is required if the mother and child were not born here, but this requirement is waived if the Department is satisfied they intend to remain here permanently.

There is no means test and weekly rates are 50 cents for the first child, \$1 for the second and \$1.50 for each other child in the acceptable age groups. The rate for all student children and for children being cared for by institutions, is \$1.50. (Payments to student children commenced as from 14th January, 1964.)

Endowment is paid in arrears and either credited to a bank account each twelve weeks, sent by cheque or cashed by order at a post office each 28 days. For student children, payment is made only by cheque each 12 weeks.

The following table shows statistics of child endowment in Tasmania since 1955-56:

Child Endowment
Children (including Students) Endowed and Payments

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Endowed Children and Students						
(a)—						
Children in Endowed Families (No.)	108,285	123,727	126,634	127,261	126,413	126,526
Children in Approved Institutions (No.)	495	563	381	403	483	521
Students (No.)	..	..	..	..	3,026	3,623
Total Endowed .. (No.)	108,780	124,290	127,015	127,664	129,922	130,670
Amount Paid During Year (b) (\$'000)	4,569	5,484	4,993	5,045	6,113	6,306

(a) Number at 30th June. Children, those under 16 years; students, 16 but under 21 years.

(b) In 1955-56 and 1963-64, five twelve-weekly payments were credited directly to bank accounts, instead of four. In 1960-61, endowment payable on 4th July, 1961 was brought to account in 1960-61.

Pensioner Health Benefits and Tuberculosis Allowances

The pensioner medical service and tuberculosis allowances are described in this chapter under the heading "Health".

Commonwealth Rehabilitation Service

In 1941, the Curtin Government introduced provisions for the vocational training of invalid pensioners. In 1948, the Chifley Government provided for the rehabilitation of invalid pensioners and of unemployment and sickness benefit recipients. The Menzies Government in 1955 extended eligibility to persons receiving tuberculosis allowances and to children of 14 and 15 years who otherwise might qualify for an invalid pension at 16. In 1958, widow pensioners and people receiving special benefit were granted eligibility.

The Service aims to help handicapped people reach their maximum physical fitness and prepare for suitable employment. Selection is made if the disability is a substantial handicap to engaging in full employment; is remediable (except in the case of blind people); and if there are reasonable prospects of the person working within three years of starting treatment or training. Disabled people who do not qualify for free service may pay for rehabilitation themselves, or may be sponsored by private or government organisations. In Tasmania, the Department's rehabilitation centre is located in Hobart.

The following table shows the numbers accepted for rehabilitation and placed in employment in Tasmania since 1955-56:

Operation of Commonwealth Rehabilitation Service

Particulars	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Persons—						
Accepted for Rehabilitation (No.)	79	101	100	79	102	80
Placed in Employment . . . (No.)	71	97	96	74	82	75
Expenditure (a) (\$'000)	31	44	50	39	44	60

(a) Excludes capital expenditure on sites and buildings, and administrative costs of the Rehabilitation Service.

Homes for the Aged

Under the *Aged Persons Homes Act* 1954, the Menzies Government provided for subsidies, on a \$ for \$ basis, to approved organisations intending to build or acquire homes for aged persons. In 1957 the cost of land was allowed as part of the capital cost, and the Commonwealth contribution was increased to \$2 for \$1. The aim is the provision of conditions approaching ordinary domestic life. ("Homes" in this context does not refer to houses built under the Commonwealth-State Housing Agreement.)

Accommodation for Disabled Persons

Under the *Disabled Persons Accommodation Act* 1963, the Menzies Government provided subsidies on a \$2 for \$1 basis towards the capital cost of approved accommodation for disabled persons working in sheltered workshops. The intention of the Act is to encourage and assist voluntary endeavour in this field.

State Department of Social Welfare*Expenditure*

Activities of this State Government Department are grouped under Child Welfare and Relief. The following table shows expenditure over a five-year period:

Department of Social Welfare—Expenditure
('\$000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Administration and General ..	134	153	167	183	196
Relief Division	111	136	142	152	167
Child Welfare Division..	133	140	156	161	177
Ashley Home for Boys..	63	69	69	83	82
Grants to Organisations ..	59	54	64	78	110
Total	501	552	599	657	732

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

In 1964-65, the major expenses were: under Administration and General, salaries, \$163,000; under Relief Division, fuel allowances for eligible pensioners, \$83,000 and relief and maintenance \$77,000; under Child Welfare Division, maintenance of boarded-out children, \$92,000 and contributions towards maintenance of children in approved institutions, \$62,000; and under Grants to Organisations, Tasmanian Institute for Blind and Deaf, \$68,000, to supplement wages of blind employees, \$16,000, to Aikenhead House, \$8,000, Eskleigh Home, \$6,000 and Sunshine Home, \$5,000.

Relief Division

The functions of this Division are to investigate applications for assistance from needy mothers with dependent children and to give cash relief where necessary; to issue fuel allowances to eligible aged and invalid pensioners; and to help pay for funerals, transport, furniture removals and artificial limbs, spectacles, &c. for persons in indigent circumstances. Special grants are made to deserted wives (and sometimes to deserted husbands, with children), wives with husbands in gaol, to certain persons awaiting receipt of Commonwealth benefits or pensions, and to relatives supporting deserted children.

Domestic Assistance: This service seeks to provide a housekeeper where a mother is unable to undertake her usual domestic duties because of pregnancy or illness, or where the lack of domestic assistance in the home is a cause of hardship. If a housekeeper cannot be made available, or if a room is not available for her, children may be provided with temporary accommodation, usually at "Rochebank" Hostel.

Housekeepers are made available for periods from one to six weeks, and wages are normally recovered from the householder, subject to reduction in the event of hardship. The cost of the service in 1964-65 was \$3,500, reduced by \$1,000 refunded by householders, and housekeepers were supplied on 17 occasions.

Child Welfare Division

The work of this Division includes the investigation of complaints that children are neglected or inadequately controlled; the supervision of neglected children in their own homes before more drastic action is needed; the investigation of cases to appear in Children's Courts; the supervision of children under order of the Court; the placement and supervision of children declared by the Court to be wards of the State; the control of the Department's receiving and other homes; the recovering of maintenance costs, where possible, from parents of children who are a charge on the Department; the licensing and supervision of children's boarding homes and day nurseries; the supervision of child migrants; and adoptions and the investigation of enquiries concerning children's welfare.

Child Migrants: The Department investigates accommodation and employment proposed for children who are to migrate to the State unaccompanied by their parents; liaises with the organisations approved for the reception of child migrants and acts as their guardian, under delegation from the Commonwealth Minister for Immigration.

Adoption of Children: Women Child Welfare Officers investigate applications by prospective adoptive parents, interview mothers wishing to place their children for adoption, and arrange placement of children with their adoptive parents. Application for orders of adoption are prepared by the Department and heard by a magistrate. There were 264 orders for adoption made in 1964-65.

Welfare of Children in Divorce Actions: Under the Federal *Matrimonial Causes Act* 1959, welfare officers investigate, at the request of Courts, the circumstances and make proposals to safeguard the welfare of children whose parents are petitioning for divorce. Five of these investigations were made in 1964-65.

Preventive Work: This involves the investigation of complaints concerning children's welfare and securing the co-operation of parents to effect improvement. Assistance is often sought by parents whose children's conduct is causing them concern. At 30th June, 1965, there were 108 families on the preventive supervision list.

Children's Court Statistics

In Tasmania, a child cannot be prosecuted without his case having first been referred to a Welfare Officer for investigation and a recommendation having been made. In 1964-65, 66 children originally referred to Welfare Officers with a view to proceedings were not brought before Children's Courts; the following table shows the ages and sex of children *reported* in that year (but not necessarily involved in Children's Court proceedings):

Number of Children Reported for Prosecution, 1964-65
Classified by Age and Sex

Sex	Age (in Years)										Total
	Under 8	8	9	10	11	12	13	14	15	16	
Boys	27	21	28	33	57	83	88	159	166	262	924
Girls	22	4	9	6	4	12	6	24	27	38	152
Total	49	25	37	39	61	95	94	183	193	300	1,076

The offences for which children were reported over a five-year period are shown in the following table. Where a child was reported for more than one offence, the apparently more serious one has been listed.

Children Reported for Prosecution
Classes of Offences

Offence	1960-61	1961-62	1962-63	1963-64	1964-65
Damage to Property	114	141	105	132	94
Breaking, Entering and Stealing	194	190	205	245	211
Stealing	303	220	251	243	262
Receiving	17	8	18	17	7
Illegal Use of Vehicle	58	46	70	59	61
Offences Involving Fraud	6	5	3	12	6
Sex Offences	23	12	12	15	12
Other Offences Against the Person	17	8	17	21	18
Offences Against Decency	4	2	10	8	13
Disorderly Conduct	26	45	30	27	29
Traffic Offences	99	108	99	134	83
Breaches of Licensing Laws	41	43	35	107	96
Breaches of By-Laws	43	26	37	52	18
Firearm Offences	43	42	40	44	43
Sub-total	988	896	932	1,116	953
Appearing as Uncontrolled	17	17	19	34	38
Appearing as Neglected	23	106	92	70	79
Breaches of Supervision	(a)	(a)	5	6	6
Total	1,028	1,019	1,048	1,226	1,076

(a) Not available.

Wards of the State and Supervised Children

Children are made wards of the State either on application of a parent or relative (e.g. in the case of both parents' desertion), or by order of a Court. They are wards until they reach the age of eighteen years, but wardship can be terminated earlier or extended to twenty-one years at the discretion of the Minister. At 30th June, 1965, there were 771 wards of the State under the supervision or control of the Department. Of these, 38 per cent were living in foster homes, 24 per cent in non-Departmental children's homes, 16 per cent with parents or relatives and 14 per cent in Departmental institutions; a further eight per cent were in private lodgings and not living with parents or relatives.

Wards of the State are placed either in foster homes (in the main, ordinary family residences) or in children's homes; some of the latter institutions are privately administered while others are a direct Departmental responsibility.

Payment for wards in foster homes is made by the Department and varies according to the age of the child. The total cost was \$92,000 in 1964-65. Often such payments are not required, e.g. in the case of a child whose adoption is being arranged. Non-Departmental children's homes receive contributions towards the cost of maintaining wards. The total contributions were \$62,000 in 1964-65. While still under the supervision of welfare officers, wards are often returned to their parents or guardians; wardship in these cases is frequently terminated early, as it is with many who successfully take up employment.

During 1964-65, 137 children came under the supervision of the Department. Of these, 34 were admitted on the application of parents or guardians, two being uncontrollable and 32 being deserted children or children with parents unable to provide for them. Courts declared a further 103 children to be wards of the State, 68 having been charged with delinquency and 35 with being neglected. During the year, 29 children were discharged from control on being legally adopted and 107 because of age or because there was no further need of Departmental supervision.

Departmental Homes: State receiving homes which provide temporary accommodation for children are maintained at Hobart, Launceston and Wynyard. Also, in Hobart, a hostel provides accommodation for older boys who have left school and need to be established in employment.

Ashley Home for Boys, Deloraine, provides care and training for older wards who, because of maladjustment or delinquency, require special institutional control. Wybra Hall (Mangalore) fulfills a somewhat similar function with the special adaptations necessary to cater for younger boys between the ages of nine and fourteen years.

Weeroona Girls' Training Centre (Latrobe) provides for those adolescent girls in the care of the Department who require special institutional supervision and training. Girls of school age attend schools in the district and others receive correspondence school education. Older girls are trained in various aspects of domestic work.

Non-Departmental Homes: Other children's homes in which wards are placed are Kennerley Boys' Home, Salvation Army Boys' Home, Salvation Army Girls' Home, Aikenhead House, Bethany Boys' Hostel, Mt. St. Canice Convent, all in Hobart; Boys' Town and Yalambee Hostel, Glenorchy; Clarendon Home, Kingston; Girls Home, and Northern Tasmanian Home for Boys, Launceston, and Roland Boys' Home, Sheffield.

REPATRIATION SERVICES AND PENSIONS

General

The Repatriation Commission was established under Federal legislation in 1920; "repatriation" is hardly an adequate title for the Commission whose chief responsibilities are: (i) the payment of war and service pensions to eligible ex-servicemen and women and their dependants; (ii) the provision of medical treatment to ex-servicemen and women for injuries and illnesses caused or aggravated by their war service; (iii) the provision of medical treatment in certain circumstances to ex-servicemen and women who are suffering from injuries and illnesses not caused or aggravated by war service; and (iv) the provision of medical treatment to widows and dependants of deceased ex-servicemen whose deaths are due to war service.

Benefits are provided in respect of service, not only in the 1914-18 and 1939-45 Wars, but also in the Korea and Malaya operations, with the British Commonwealth Far East Strategic Reserve, and the Special Overseas Forces; more recently, benefits have been extended to ex-servicemen from the Vietnam theatre of operations.

Medical Services

To discharge these functions in Tasmania, the Repatriation Commission maintains a branch office and a Repatriation General Hospital in Hobart. Medical treatment for those eligible is provided at the Repatriation Hospital, where facilities exist for both in-patients and out-patients; in addition, it is possible for those eligible for treatment to select a doctor from an approved panel and thus receive medical attention in any part of the State at the expense of the Commission. Payment for treatment in hospitals other than the Repatriation Hospital is also met by the Commission, in certain circumstances.

War Pensions

Eligibility

War pensions may be granted to persons in the following categories: (i) a member of the forces who served outside Australia, in Australian Territories (e.g. New Guinea), or within Australia in circumstances which can be regarded as combat against the enemy, is covered for war pension purposes in respect of incapacity or death which may result from any occurrence that happened between enlistment and termination of service; (ii) in other cases, where a member served only in Australia, incapacity or death, to be pensionable, must have been attributable to service; (iii) for all members with more than six month's camp service, eligibility for pension may be established where a condition existed at enlistment and it is considered that the condition was aggravated by service; (iv) if an ex-serviceman who served in a theatre of war becomes incapacitated or dies from pulmonary tuberculosis, war pension is payable as if the incapacity or death resulted from an occurrence on service.

Those who receive war pensions are also held to be eligible for free medical and hospital treatment in respect of the disabilities for which the pension is granted. (With certain special categories of pensioners, the eligibility for free treatment is widened to cover all disabilities.) It is possible, however, for an ex-serviceman to be declared eligible for free treatment without necessarily being granted a pension.

Claims and Appeals

Section 47 of the *Federal Repatriation Act 1920-1965* lays down the principles to be followed in the determination of claims and appeals. The Commission and the Appeal Tribunals are required to give claimants or appellants the benefit of the doubt in the weighing of evidence, and the burden of proof, in any legal or technical sense, is removed from the claimant or appellant.

The two appeal bodies are: (i) the War Pensions Entitlement Appeal Tribunal which hears cases in which death or incapacity in a claim has been held not to rise out of war service; (ii) the Assessment Appeals Tribunal which hears cases in which the current pension assessment is disputed or where a "Nil" assessment of war pension has been made in respect of an ex-serviceman's incapacity, such incapacity having been accepted nevertheless as arising out of war service.

Rates

The main classes of war pension are the special (T.P.I.) rate, the general rate and the war widows' pension. These are not subject to a means test except where stated for certain classes of dependants. The rates that follow include changes introduced by amending legislation subsequent to the Federal Budget on 17th August, 1965.

The Special Rate War Pension: This is payable to those who are totally and permanently incapacitated, and unable to earn more than a negligible percentage of a living wage. The weekly rate is \$28.50, plus \$4.05 wife's allowance and \$1.3750 for each child under 16 years (paid fortnightly as \$2.75).

The General Rate War Pension: This is the rate payable to those who suffer war-caused disabilities but who are not thereby prevented from working, although their earning capacity may be reduced. The actual pension payable is assessed according to the degree of incapacity suffered. The maximum (100 per cent rate) is \$12 weekly but pensions may be granted from as low as 10 per cent of the maximum. Maximum dependants' allowances are similar to those for the *special rate* category but payment is made in proportion to each ex-serviceman's assessed degree of incapacity.

The War Widows' Pension: This is paid to widows of ex-servicemen who died as a result of war service, and to their children under the age of 16 years. The weekly rates are: widow, \$12.00; first child, \$3.90; second and each subsequent child, \$2.75.

A war widow, in addition to pension, may receive a *domestic allowance* of \$7 weekly if she is over 50 years of age; or is permanently unemployable; or has a dependent child under 16 years, or a dependent child over 16 years being educated and not in receipt of an adequate living wage.

War Pension Payments

The following table shows, for Tasmania, the number of pensions in respect of ex-servicemen and their dependants, together with expenditure on war pensions:

War Pensions—Pensioners and Payments

Year	Number of Pensions Current at 30th June				Expenditure During Year (c)
	Incapacitated Ex-Servicemen	Dependants of—		Total (b)	
		Incapacitated Ex-Servicemen	Deceased Ex-Servicemen (a)		
1955-56	8,219	16,614	1,650	26,483	\$'000 4,036
1960-61	8,479	18,089	1,737	28,305	5,166
1961-62	8,537	18,095	1,766	28,398	4,988
1962-63	8,620	17,763	1,831	28,214	5,668
1963-64	8,659	17,366	1,879	27,913	6,158
1964-65	8,627	16,506	1,968	27,109	6,214

(a) Includes war widows' pensions.

(b) Includes miscellaneous pensions not specified under the "ex-servicemen" details, e.g. Seamen's War Pensions and Allowances.

(c) Includes widows' allowances.

At 30th June, 1964, the proportion of ex-servicemen in Tasmania receiving war pension in respect of service in the 1914-18 War was 21.5 per cent; the 1939-45 War, 77.4 per cent; and the Korea and Malaya operations, 1.1 per cent.

Although the term "incapacitated" has been used in the previous table, it should be noted that *general rate* war pensions are paid to ex-servicemen who are in employment; accordingly, the number of ex-servicemen in the table includes those with all degrees of incapacity from minor to total.

Budget of August, 1966

New weekly pension rates announced in the budget included: special rate, \$30.50; war widows', \$13.

Service Pensions

Eligibility

The categories of ex-servicemen or ex-servicewomen who may receive service pensions subject to a means test of income and property, are as follows: (i) Men aged 60 years or over who served in a theatre of war (or women 55 years and over who served abroad). No dependants' pensions are payable if the service pension has been granted to a man on account of age. (ii) Men who are permanently unemployable and who served in a theatre of war (or, in the case of women, served abroad). Dependants' pensions are payable. (iii) A person suffering incapacity from pulmonary tuberculosis whether or not the person served in a theatre of war. Dependants' pensions are payable.

"Dependants" in the context of the previous paragraph refers to the pensioner's wife and up to four children under 16 years of age.

Service Pension Payments

The following table shows, for Tasmania, the number of service pensions in respect of ex-servicemen and their dependants, and expenditure on pension payments:

Service Pensions—Pensioners and Payments

Year	Number of Pensions Current at 30th June				Expenditure During Year
	Ex-Servicemen	Dependants of—		Total	
		Living Pensioners	Deceased Pensioners		
1955-56	933		787	1,720	\$'000 292
1960-61	1,433		873	2,306	580
1961-62	1,581		870	2,451	736
1962-63	1,687		898	2,585	838
1963-64	1,739	777	144	2,660	874
1964-65	1,737	776	145	2,658	904

Rates

The rates that follow include amendments made following the bringing down of the Federal Budget on 17th August, 1965. The maximum weekly rate of service pension is: single ex-serviceman, \$12; married ex-serviceman, \$11; wife under 60 years, \$6 (at 60 years, the wife may qualify for \$11 old age pension). The rate for eligible children is \$1.50 a week for the first child and \$0.25 for each other child up to and including the fourth.

If an ex-serviceman is receiving a service pension on the grounds of being unemployable, his service pension may be increased by \$1.50 a week in respect of each child other than the first, whether or not such children are eligible for dependant's pension in their own right.

Budget of August, 1966

New weekly pension rates announced in the budget included: service, single, \$13; married, \$23.50 (if wife 60 years or older).

Free Medical Benefits

An ex-serviceman or ex-servicewoman in receipt of a service pension is entitled, with certain exceptions, to free medical benefits for disabilities not caused by war. These benefits include general practitioner service, specialist service where necessary, full pharmaceutical benefits, surgical aids and appliances (including spectacles), dental treatment and treatment in Repatriation General Hospitals. (See "Pensioner Medical Service" in Health section of this Chapter.)

HEALTH

State Health Services—General

Organisation, Department of Health Services

The State Department of Health Services is under the jurisdiction of the Minister for Health, with the Director General of Health Services as the permanent head. The Headquarters of the Department controls three Divisions, each under a Director, namely Public Health, Psychiatric Services and Tuberculosis. Two specialised services are also part of the Department, namely the State Health Laboratory under the control of the Director of Pathology, and the Government Analyst and Chemist Laboratory, under the control of the Government Analyst. The balance of the Department's responsibilities are functions of Headquarters, under the direct control of the Director General.

Expenditure

Expenditure from Consolidated Revenue for a five-year period is as follows:

Department of Health Services—Expenditure from Consolidated Revenue (\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Administration, Head Office	147	163	164	185	212
Hospital and Medical Services—					
Administration	104	113	131	135	170
Grants to Hospitals	3,650	4,079	4,227	4,546	5,233
Medical Services—Country Districts	89	81	77	83	77
District Nursing Service	153	154	160	163	161
Dental Health Service	119	116	100	130	144
State Laboratory—Pathology .. ..	..	..	..	(a)	4
National Fitness Section	25	26	27	30	38
Nurses' Registration Board	2	2	3	4	4
Government Analyst and Chemist	39	37	37	45	43
St. John's Park Hospital	631	704	718	783	847
Public Health—					
Administration and Inspectors	68	88	124	121	149
School Health Service	67	70	71	81	94
Child Health Service	113	112	113	119	126
Mothercraft Home	48	57	57	61	65
Tuberculosis Division—					
Administration	133	134	136	143	155
Chest Hospitals	299	298	297	305	305
Psychiatric Services—					
Administration	61	78	77	84	106
Mental Health Hospitals	1,078	1,164	1,216	1,331	1,503
Miscellaneous Grants	174	221	249	212	258
Total	7,000	7,697	7,984	8,561	9,694

(a) Less than \$500.

Headquarters Division

General

The responsibility of the Headquarters of the Department of Health Services includes: the public hospital services and the licensing of private hospitals and other medical establishments under the *Hospitals Act* 1918; the District Medical Service; Geriatric Service, which includes St. John's Park Hospital; the School Dental Service; the Tourist and District Nursing Service; legislation concerned with health and allied matters; the Nurses' Registration Board and the Dental Mechanics' Registration Board; some specialist medical services; the statistical classification of public hospital morbidity and mortality; the State Drug Advisory Committee; liaison with the Health Departments of other States and the Commonwealth (the Director General is a member of the National Health and Medical Research Council); as controlling authority, the Hospital Employees' Award, the Medical Officers' Award and the Nurses' (Public Hospitals) Award; the control and maintenance of Crown property occupied by the various sections of the Department; the appointment and salaries of staff who are not officers of the Public Service.

School Dental Health Service

This service, available free to children attending school, aims to examine and treat every child each six months, but staff shortages have prevented this from happening in the past. In 1964-65 fixed surgeries were in use or under construction in 19 districts and in clinics at Hobart and Launceston. Fifteen mobile caravans were also in use. An orthodontic service based on Hobart, and using a mobile caravan, supplements the therapeutic dental service.

Dental Nursing: Adopting the New Zealand system, Tasmania became the first Australian State to develop a School of Dental Nursing. Ten students were enrolled in 1966 for the first year of a two-year course, and ten will be enrolled annually. A residential hostel is attached. The School, located in Hobart, has a principal and a matron, and will itself treat forty patients a day. It is expected that a total of approximately 30 dental nurses will work with dentists in the districts; a dental nursing certificate or its equivalent will be needed for a nurse to be appointed.

Fluoridation

In 1964, Hobart became the first Australian capital city to add sodium fluoride to its water supply. Many municipal councils have arranged for its addition, while others supply fluoride tablets to mothers wanting them for their children; fluoride is not administered in all water supplies in Tasmania. It is believed that it helps the absorption of calcium, thus strengthening bones and reducing the incidence of dental decay, particularly among children.

District Medical Service

In 1937 the Government undertook to help the more remote municipalities to obtain medical services; at present, participating municipalities levy a rate under the *Local Government Act* 1962 as amended, and meet between one half and one third of the cost of the scheme.

The scheme provides a general practitioner service free to all residents of the municipality for consultations and home visits. A surgery is usually attached to the District Medical Officer's house, and branch surgeries are sometimes located elsewhere within the district. Attention out-of-hours is charged for in accordance with a set scale, as are insurance medical examinations, compensation treatment and attention to visitors to the State.

As well as general practice, activities include the dispensing of drugs if no chemist is available; duties as Medical Officer of Health (under the *Public Health Act*) if a municipal council requests it; in some cases, duty as superintendent, if there is a district hospital within the municipality; attention to district nursing centres; and post mortem examinations.

Nursing

Nursing training is under the control of the Nurses' Registration Board. Of the State's nursing training schools, eight are general, six midwifery, two psychiatric, two child health, one tuberculosis and one geriatric.

Tourist Nursing Service

This service is based on the fact that trained nursing sisters from outside Tasmania like to visit the State and have a working holiday. These "tourist nurses" are employed for short periods in hospitals or district nursing centres. Not more than two months' service at any one time is required of a sister in any one place but she may stay longer. Some hospitals are completely staffed, at times, by sisters enjoying working holidays.

State Drug Advisory Committee

This advises on the nature, strength and variety of drugs to be supplied to public hospitals by the medical store of the Supply and Tender Department. It is not concerned with administration but helps the store to avoid stocking drugs with different brands but similar properties, and stocking drugs not likely to be required.

Division of Public Health

General

The Division of Public Health has responsibility for the preventive medical services of the State. The Director is responsible for the operation of the *Public Health Act* 1957, and the control of medical officers of health and other health officers employed by the Department and municipalities throughout the State. A major responsibility is public immunisation programmes, conducted through the municipalities; preparations distributed include the Salk and Sabin anti-poliomyelitis vaccine and the Triple Antigen vaccine (against whooping cough, tetanus and diphtheria). The Division is also responsible for the Child Health Service; the School Medical Service; the Mothercraft Home; the Health Education Council; the Nutrition Advisory Service; industrial hygiene; environmental sanitation; pure food and pure drug quality control; the public health aspects of the building regulations; infectious diseases control; the National Fitness Service.

Child Health Service

Child welfare nurses attached to Child Health Centres advise mothers on the care and upbringing of their babies and younger children. In 1965 there were 89 centres and 12 travelling units. Voluntary Child Health Committees working for the centres raise money for furnishings and equipment in buildings erected by the Department. The functions of the centres include examination of babies, maintenance of individual histories, and advice on diets, feeding techniques and hygiene. Phenistix tests are carried out for the detection of phenylketonuria, a rare complaint which results in mental deficiency if not treated in infancy. Children who are not brought to the centres are visited at home by the sisters; details of births and addresses are supplied by the hospitals.

Courses of lectures in mothercraft are given in response to requests by schools; certificates are awarded to approximately 4,500 girls who sit each year for the mothercraft examination.

The Mothercraft Home: This Home, located in Hobart, provides training for qualified nursing sisters who want to gain child health nursing certificates, and for women who want to become mothercraft nurses. It accommodates children under two years who need care or who cannot be looked after at home, and mothers learning to look after children or having feeding problems.

School Health Service

This is available free to children under 16 years. The aim is for an annual inspection at each school by a medical officer, but staff shortages have limited this to examinations at school entry, next at 10 or 11, and finally at 14 or 15 years. Doctors particularly look for conditions likely to affect a child in a school situation. Parents can make appointments for their children to be examined at centres in Hobart, Launceston, Devonport and Burnie.

School nursing sisters visit schools regularly to supervise the health and hygiene of pupils. They maintain medical records, perform cleanliness inspections, test sight and hearing, assist at medical examinations and follow-up defects notified. They also organise immunisation sessions in their schools and assist in research projects.

Health Education

The Health Education Council is composed of representatives of the Divisions of Public Health and Psychiatric Services, the Education Department and the Dean of the Faculty of Medicine. It aims to ensure that information on health is available to those engaged in education and has encouraged the inclusion of physiological subjects in the primary school curriculum. Activities have included planning an anti-smoking campaign, devising menus for school tuck-shops and recommending improvements in school lavatory facilities to combat infectious hepatitis.

Nutrition Advisory Service

Nutrition education is aimed at preventing deficiency diseases brought about by defective diet. Surveys give knowledge of the dietary pattern in various parts of the State (this also aids local home arts teachers in their teaching); studies have included overweight children, vitamin C intake of young children, and the consumption of milk, fruit and vegetables.

Industrial Hygiene

Surveys are done in various industries to discover cases of early industrial disease, (e.g. chrome ulcers and lead poisoning). This work is done in conjunction with the Department of Labour and Industry.

Environmental Sanitation and Food Control

The Health Inspectorate, which acts in conjunction with the health inspectors of the municipal councils, is largely concerned with problems of drainage and sewerage and adequate control over the processing of food. Septic tank installations are regulated and efforts made to have sewerage works extended. Plans of buildings for places of public entertainment or assembly are checked, and standards of shops, and cleanliness and care of food are inspected.

National Fitness Section

This is concerned with putting into effect the Tasmanian National Fitness Council's policy, which is the promotion of amateur sport and physical recreation, co-ordination of youth work, and assistance to existing youth and recreation groups. The main cost is met by the State Government (\$37,766 in 1964-65) and a small grant is made by the Commonwealth Government. Close contact is maintained with local government authorities and community organisations interested in aspects of youth work and national fitness. Assistance is given in the development of indoor recreation centres, youth and adventure camping programmes and other outdoor activities such as canoeing, mountaineering and bushwalking. Sports coaching classes are conducted for young people as well as classes for people of older age groups, particularly housewives. Assistance is given in the establishment and conduct of youth clubs. The Youth Hostel Association is supervised by this Section.

Infectious Diseases

These are notifiable under the *Public Health Act*, the aim being to prevent or check their spread. A campaign to immunise children and adults against poliomyelitis, using the Salk, and later the Sabin oral vaccine has eliminated this disease from Tasmania over the past four years. In 1964-65 a mild strain of scarlet fever virus led to an increase in the notification of this disease but there has been a decline in infectious hepatitis, possibly due to a build-up in general immunity.

Special conditions apply to venereal diseases. Persons suffering from them must not marry until cured, or engage in the manufacture or distribution of foodstuffs, and are liable to arrest and detention if failing to continue treatment until cured.

Quarantine provisions and tuberculosis are dealt with in later sections.

The following table shows the incidence of infectious diseases in Tasmania for a five-year period:

Infectious Diseases Notified to Department of Health Services
Number of Cases

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Rheumatic Fever	10	10	13	33	26
Nephritis .. .. .	..	..	2	2	6
Bacillic Dysentery	2	6	11	9	1
Infantile Diarrhoea and Enteritis	20	11	16	15	21
Diphtheria	2	1	..	..	3
Meningitis	26	13	20	8	14
Glandular Fever	12	31	34	11	..
Hydatids	11	18	27	16	21
Infectious Hepatitis	148	488	608	997	293
Rubella	2	11	20	28	107
Scarlet Fever	50	21	46	149	867
Typhoid Fever (including Paratyphoid) ..	2	1	1	3	6
Tuberculosis	117	118	111	105	81
Poliomyelitis	62	..	..	..	..
Malaria .. .. .	..	2	..	1	..
Encephalitis .. .. .	..	..	..	1	..
Brucellosis	2	..	..	1	..
Filariasis .. .. .	..	1	1	..	..
Puerperal Fever .. .. .	..	1	1	..	..
Ophthalmia Neonatorum .. .. .	..	1	..	..	..
Gonorrhoea	176	263	230	173	200
Syphilis	10	11	5	10	7
Total	652	1,008	1,146	1,562	1,653

Division of Psychiatric Services

General

The Division controls the major psychiatric rehabilitation hospital, Lachlan Park, and the associated Millbrook Rise hospital, both at New Norfolk. It provides regional clinical psychiatric facilities, the specialists employed including social workers. Some of these services operate at the general hospitals whilst others, such as the child psychiatric unit and the alcoholic rehabilitation service, are established separately. Day hospital facilities are also available.

The legislation previously administered by the Department included the *Mental Hospitals Act* 1858, the *Mental Deficiency Act* 1920 and the *Sexual Offences Act* 1951. These Acts were all superseded by the *Mental Health Act* 1963 which is based on the modern theory that a mental institution should be a true hospital where the majority of patients attend voluntarily; there should be a high turnover of short-stay patients who are given intensive medical treatment and who return home with health restored. Application of this principle has had the effect of reducing the number of patients compulsorily detained from about 75 per cent of the total psychiatric hospital patient population to about 25 per cent.

Lachlan Park Hospital

The daily average number of patients at the Lachlan Park Hospital rose from 711 in 1964 to 875 in 1965. This did not indicate more patients suffering from mental disorders and was simply the result of an administrative re-organisation; patients previously under the control of the Mental Deficiency Board were taken onto the strength of Lachlan Park Hospital.

In 1964-65, 512 new patients were admitted to Lachlan Park Hospital and a further 89 re-admitted. The principal mental disorders diagnosed for these 601 cases were: alcoholic psychosis, 157 cases; congenital mental deficiency without epilepsy, 93; schizophrenia without congenital mental deficiency, 85; and senile dementias, 60. The following table shows the number of patients admitted and discharged, or who died, over a five-year period:

Lachlan Park Hospital
Number of Patients Admitted and Discharged, and Deaths

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Patients at Beginning of Year ..	787	755	768	687	709
Patients Admitted—					
First Entry	240	319	328	338	512
Re-admissions	112	62	97	185	89
Returned from Leave	140	219	65	141	124
Total	492	600	490	664	(a) 882
Patients—					
Discharged from Hospital	282	274	306	391	474
Proceeded on Leave	200	267	230	206	174
Died	42	46	35	45	55
Total	524	587	571	642	703
Patients at End of Year ..	755	768	687	709	(a) 888

(a) Includes 157 Mental Deficiency Board patients transferred to Lachlan Park strength during 1964-65 and not specified as admissions.

The following table shows the diagnosis of mental illness of patients in Lachlan Park hospital over a five-year period:

Lachlan Park Hospital
Number of Patients at 30th June According to Diagnosis of Mental Disorder

Mental Disorder	1961	1962	1963	1964	1965
Congenital Mental Deficiency (a)	207	213	151	189	258
Dementias (b)	97	107	109	107	151
Organic Psychoses (c)	66	80	100	92	101
Functional Psychoses (d)	290	297	242	253	280
Psycho-Neuroses (e)	95	71	85	68	98
Total	755	768	687	709	(f) 888

(a) Includes deficiencies, with and without epilepsy; also with schizophrenia.

(b) Includes senile, pre-senile, and secondary or terminal dementias and with arteriosclerosis.

(c) Includes gross brain lesion; epileptic and alcoholic psychoses; toxic, confusional or exhaustive psychoses; Parkinsonism and Huntingdon's Chorea (St. Vitus' dance).

(d) Includes manic-depressive psychosis, involutional melancholia, schizophrenia not included in (a), paraphrenia or paranoid states, paranoia, recurrent melancholia, and endogenous depression.

(e) Includes psychopathic personality, anxiety state and hysteria.

(f) The increase is largely due to the transfer of Mental Deficiency Board patients to Lachlan Park Hospital strength during 1964-65.

Other Institutions

Millbrook Rise is a small neurosis hospital at New Norfolk for voluntary patients. It charges fees and provides intensive psychiatric and nursing treatment for patients with severe neuroses and early psychoses. In 1964-65, 166 patients were treated, the principal mental disorders being: anxiety states, 56 cases; melancholia and depressive states, 47; schizophrenia and schizoid states, 30.

"Karingal" at St. John's Park, New Town, houses some mentally deficient patients under the care of the Guardianship Board, constituted under the *Mental Health Act 1963*. (This Board has replaced the former Mental Deficiency Board.)

Extra-Mural Psychiatric Services: Psychiatrists provide consultant services to the general and district hospitals of the State. Psychiatric social workers and welfare officers supervise mentally defective patients and give after-care to people discharged from psychiatric hospitals.

A clinic is maintained at the Division of Public Health in Hobart. Attached to it is the Alcoholism Information Centre. Psychiatrists based on Launceston provide a regional service, travelling to the Mersey and Burnie Hospitals weekly.

Division of Tuberculosis

The Division is concerned with diagnosis, treatment and after-care. Under an arrangement with the Commonwealth, the Tasmanian Government conducts a campaign against T.B. The State is reimbursed by the Commonwealth Government for approved capital and maintenance expenditure, in carrying out the physical work of the campaign.

An allowance is paid by the Commonwealth to T.B. sufferers to encourage them to give up work, to minimise the spread of the disease, and to promote better treatment. Payment of the allowance is subject to a means test on income

(but not on property) and provides \$7 a week for a single person and \$14 a week for a married person. If other income is in excess of the amount of the allowance, the allowance is reduced by the amount of the excess.

Tubercular patients are treated at the Tasmanian Chest Hospital (New Town) and the Northern Chest Hospital (Evandale). The X-ray campaign has led to a reduction in demand for in-patient treatment and to generally shorter periods in hospital. The Chest Clinics at Hobart, Launceston, Devonport and Burnie are expected increasingly to become the focal points for treatment and supervision. Compulsory X-ray examinations at regular intervals often uncover chest abnormalities other than tuberculosis.

The following table shows the diagnosis of tuberculosis cases notified in Tasmania over a five-year period:

New Cases Notified to Tuberculosis Division
Classification by Diagnosis and by Sex

Particulars		1960-61	1961-62	1962-63	1963-64	1964-65
Pulmonary	Males	85	95	64	61	48
	Females			27	18	18
Tuberculous Pleural Effusion	Males	9	5	6	5	1
	Females			1	3	2
Primary Tuberculosis ..	Males	6	2	2	1	1
	Females			1	2	..
Non-Pulmonary Cases ..	Males	17	16	8	5	5
	Females			2	10	6
All New Cases	Males	117	118	80	72	55
	Females			31	33	26
Persons		117	118	111	105	81

State Controlled Hospitals

General

In Tasmania, there are private hospitals and also hospitals for which the State Government accepts the major financial responsibility; in the case of the latter group, control is either direct or exercised through Hospital Boards. (Each Board consists of seven members of whom five are appointed by the Minister for Health.)

Institutions controlled by the State (either directly or through Boards) include four general hospitals, 16 district hospitals, 12 district nursing centres with bed accommodation, two mental hospitals, two maternity hospitals, two chest hospitals and three homes for the aged. (The Department of Health Services directly administers the chest hospitals, mental hospitals, district nursing centres and one home for the aged.) These institutions could all legitimately be described as "public". However, in the tables in this section, the term "public" is applied only to the general and district hospitals, the other types of institution being specified separately.

General Hospitals (Public)

Hospitals providing all facilities and specialised treatment are the Royal Hobart, Launceston General, Mersey General (at Latrobe) and North Western General (at Burnie). The Queen Alexandra (Hobart) and the Queen Victoria (Launceston) are obstetric and gynaecological hospitals.

Specialist treatment is available at general hospitals in obstetrics, gynaecology, orthopaedics, urogenital surgery, plastic and reconstructural surgery, neuro-surgery and neurology, radiology, pathology, radiotherapy

psychiatry and ophthalmology; skin diseases and venereal diseases are also treated and clinics operate in thoracic medicine and surgery. An emergency obstetrical service, with specialists based on Hobart and Launceston, provides a free service to the smaller public hospitals, district nursing centres, and district medical officers outside the two cities.

The Lady Clark and Peacock Homes and Clare House are annexes of the Royal Hobart Hospital, the first two admitting patients for convalescence and physiotherapy as an extension of treatment, and the last treating nervous diseases and alcoholism.

Fees

The daily general ward fees charged in the State-controlled hospitals are not much lower than those in private hospitals. However, the former fees are all-inclusive, (i.e. covering medical attendance, surgery, pathology, &c.) while the latter cover only accommodation and general nursing. Under the "personal patient" scheme, a State hospital patient may have his own doctor, if he is an honorary doctor at the hospital, for the payment of an additional fee. Voluntary insurance with hospital fund organisations and Commonwealth hospital benefits enable most patients to meet the fees charged.

District Hospitals (Public)

These do not provide the full range of services available in the general hospitals, and do not have resident medical officers. They are located at Beaconsfield, Campbell Town, Currie, Franklin, Longford, New Norfolk, Ouse, Queenstown, Rosebery, Scottsdale, Smithton, St. Mary's, Ulverstone, Whitemark, Wynyard and Zeehan.

Homes for Aged and Invalids

The State Government administers three homes caring for the aged and for invalids. In the table that follows, the average daily number of inmates is dissected between "general" and "hospital"; "general" refers to inmates who are not receiving treatment in the hospital sections of the homes.

Aged and Invalid Persons in Government Homes, 1964-65

Home	Average Daily Number of Inmates			Beds Available		
	For General Care	For Hospital Treatment	Total	For General Care	For Hospital Treatment	Total
Cosgrove Park (a)	109	121	230	140	134	274
St. John's Park ..	181	272	453	260	295	555
Spencer (b) ..	18	16	34	10	25	35
Total ..	308	409	717	410	454	864

(a) Cosgrove Park is administered as part of the Launceston General Hospital.

(b) This is a geriatric wing of the Spencer Hospital, Wynyard.

Finances of State Controlled Hospitals

The following table gives a financial summary of the operation of State controlled hospitals and homes for the aged in 1963-64 ("public" hospitals in the table include general and district hospitals):

State Controlled Hospitals and Homes for the Aged—Receipts and Payments (a)
1963-64
(\$'000)

Particulars	Hospitals (excluding Mental)				Mental Hospitals	Homes for Aged
	Public (b)	Chest	Maternity (c)	Total		
Receipts—						
Government Aid—						
State Government	4,094	305	208	4,607	1,289	715
Commonwealth						
Hospital Benefits	408	..	6	414	..	270
Fees... ..	1,404	..	260	1,664	57	125
Donations and Other	15	..	(d)	15	9	5
Total ..	5,922	305	474	6,701	1,355	1,116
Payments—						
Salaries and Wages	3,915	217	298	4,430	817	782
Repairs, Maintenance and Provisions ..	1,774	84	158	2,016	415	313
Miscellaneous ..	277	4	19	300	20	21
Total ..	5,965	305	475	6,745	1,252	1,116

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) Excludes Loan Fund receipts and expenditure.

(b) Includes maternity wards in public hospitals.

(c) Excludes maternity wards in public hospitals.

(d) Less than \$500.

Staff and Patients in State Controlled Hospitals

The following table gives a summary of the main statistics relating to patients and staff in State controlled hospitals and homes for the aged in 1963-64 ("public" hospitals in the table include general and district hospitals):

State Controlled Hospitals and Homes for the Aged, 1963-64
Staff, Accommodation and In-Patients

Particulars	Hospitals (excluding Mental)				Mental Hospitals	Homes for Aged
	Public (a)	Chest	Maternity (b)	Total		
Hospitals and Homes .. (No.)	21	2	2	25	1	3
Nursing Staff (Males)	25	8	..	33	117	116
(Females)	1,191	32	118	1,341	119	134
Beds Available (Patients) .. (No.)	1,690	153	122	1,965	850	864
In-Patients—						
Admissions During Year (Males)	14,404	84	..	14,488	358	212
(Females)	18,189	36	3,864	22,089	306	168
Daily Average Number of Patients						
During Year (Males)	489	40	..	529	344	379
(Females)	532	21	99	652	365	338
(Persons)	1,021	61	99	1,181	709	717
In-Patient Costs—						
Total (\$'000)	5,371	305	473	6,149	1,252	1,116
Daily Average Per Patient (\$)	14.41	13.69	13.10	14.27	4.84	4.17

(a) Includes maternity wards in public hospitals.

(b) Excludes maternity wards in public hospitals.

District Nursing Centres

These are operated by members of the Department's District Nursing Service. They provide general and maternity nursing facilities for country areas which do not have easily accessible hospitals. Most are visited regularly by doctors. District Nursing Centres with beds are located at Alonnah (Bruny Island), Cape Barren Island, Cygnet, Dover, George Town, Koonya, Oatlands, St. Helens, Sheffield, Swansea, Triabunna and Westbury, those without beds at Avoca, Dunalley, Gladstone, Grassy (King Island), Lilydale, Mole Creek, Redpa, Ringarooma, Rossarden, Storey's Creek and Waratah.

The following table gives a summary of the work performed by the Centres over a five-year period:

District Nursing Service—Operating Statistics

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Number of Centres	25	25	25	25	25
Beds Available in Centres	52	52	50	49	49
Visits to Centres	44,845	38,612	34,330	37,205	39,406
Visits to Patients	9,114	10,873	9,568	9,684	12,626
In-Patient Bed-Days	5,263	4,969	4,333	3,698	2,923
Births	336	341	327	302	272
Child Health Visits	11,186	11,961	10,004	9,707	9,892
School Visits	111	100	65	88	110

Private Hospitals

These are operated by church and other private organisations. They are licensed to receive surgical, medical, maternity or psychiatric cases. Of the seven medical-surgical private hospitals, Calvary and St. John's (Hobart) and St. Luke's and St. Vincent's (Launceston) are the largest.

Nursing homes, operated by private bodies, are institutions which do not conform to private hospital specifications with regard to equipment, construction and staffing, as laid down under the *Hospitals Act*. They are licensed to treat general cases within limits as specified in the licence. Rest homes are licensed usually to admit old people who require minimal medical care. At 30th June, 1965, there were 33 private institutions concerned with aged people who were ambulant, convalescent, or suffering from geriatric illnesses. Nazareth House (St. Leonards), St. Ann's Rest Home (Hobart) and Meercroft Home (Devonport) are the biggest of these, 16 of which have accommodation for 20 or more patients. Two other private hospitals cater for incurable or chronic illnesses, two for general convalescence and two for retarded children.

State Health Laboratory

The State Health Laboratory is under the control of the Director of Pathology. Apart from providing certain pathological services to the Royal Hobart Hospital, other hospitals and to doctors, the laboratory provides special bacteriological and cytological services.

The Laboratory is located at the Royal Hobart Hospital; prior to 1965 special tests had to be done in Melbourne, but equipment installed in that year now enables all work to be done in Tasmania. Magnifications of 100,000 can be gained with the electron microscope and photographs in colour taken of the magnified images; this is particularly useful in medical teaching and in diagnosis. Specimens from suspected T.B. sufferers, discovered in the compulsory chest X-ray programme, are examined and uterine and other cancers

can be discovered by the Papanicolaou smear test. Tasmania was the first Australian State to introduce this test on a large scale; early diagnosis by this simple and effective method, particularly in women who show no symptoms, usually makes possible the cure of this type of cancer. Mass screening of newborn babies is done to correct errors of inborn metabolism, especially phenylketonuria. Other work includes examination of food, water and milk samples for bacterial impurities.

Government Analyst and Chemist Laboratory

The Government Analyst and Chemist provides a laboratory for the chemical analysis of a wide variety of foods, drugs and other substances and undertakes work for Government Departments and the public. Its work includes food and agricultural chemistry, forensic chemistry and toxicology, analyses for industrial hygiene purposes, water and corrosion problems, and other matters.

Other Health Matters

Children's Health Institutions

These are medical institutions run by the State or subsidised by public funds. They provide treatment and supervision along with general education. The Sight Saving School, School for the Deaf, School for the Blind, Talire (for retarded children) and Wingfield (for orthopaedic patients) are government institutions for children with particular defects.

Ambulance Services

The Ambulance Commission of Tasmania co-ordinates services throughout the State and is responsible to the Minister for seeing they operate effectively. Ambulance Boards, centred on Hobart, Launceston, Devonport and Burnie, control services in the adjacent municipalities; some municipalities, however, operate services outside the Ambulance Board scheme. The total Government grant to ambulance services, both under Board and independent control, was \$69,500 in 1964-65.

Ambulance services under control of the four Boards provide free transport for ratepayers, occupiers and pensioners. In addition to receiving Government subsidies, their income is derived from fees (payable by visitors) and municipal grants (in 1964-65, from a rate of 0.208 cents in the \$, i.e. $\frac{1}{2}$ d. in the £).

The Ambulance Commission has adopted the training standards of the Victorian Ambulance Officers' Training School.

Royal Flying Doctor Service

This was established in Tasmania in 1960 and has as its purpose the provision of medical and dental services to persons in isolated areas. If the illness or injury is serious, a doctor flies to the patient and if necessary brings him back to the Hobart or Launceston Hospital. The ambulance services receive the calls, make arrangements to charter aircraft and supply medical equipment. The Commonwealth Government makes an annual grant towards operational expenses.

Free Milk for School Children

The *States Grants (Milk for School Children) Act* of the Commonwealth was passed in 1950 with the object of improving the diet of children. All children under 13 years attending government or non-government primary

schools, pre-schools, kindergartens and creches, are eligible to receive a small quantity of free milk daily. The cost of the milk and half the capital and incidental expenses of its distribution are paid by the Commonwealth Government. In 1964-65, the Commonwealth payment in Tasmania was \$380,000.

Blood Transfusion Service

Prior to 1954, the Australian Red Cross Society, which operates the Service, was assisted only by the State Government; since then, a grant equal to 30 per cent of operating expenses has been made by the Commonwealth Government and 60 per cent by the State. The combined grant in 1964-65 was \$36,630.

Municipal Health Functions

Municipal Councils and City Corporations possess wide powers and responsibilities in public health. They organise triple antigen immunisation campaigns against diphtheria, whooping cough and tetanus, and vaccinations against poliomyelitis and smallpox. (These are available without charge to children under 17 years.) They control the condemnation of sub-standard dwellings, the effective disposal of sewerage and drainage, the provision of garbage and night soil services, the construction of reservoirs and the reticulation of water. A Medical Officer of Health, often appointed by two councils, is responsible, among other things, for enquiring into the causes, origins and distribution of diseases; for investigating influences affecting the public health of the district; for directing and supervising the municipal health inspectors in the execution of the *Public Health Act*, for inspection of local certificates of notification of infectious disease and direction of control of such disease; for reporting the existence of any nuisance and inspection of any animal, carcass, provisions or food for sale for human consumption; and for inspecting any premises where milk or milk products are produced or stored and for reporting on the health of inmates or animals on the premises.

Commonwealth Department of Health

General

The Department is concerned in Tasmania with the maintenance of quarantine stations and quarantine supervision of persons, animals, plants and goods; the provision of hospital, medical and pharmaceutical benefits; the payment of grants for free milk to school children; the pensioner medical service; tuberculosis allowances; home nursing, mental institution and other subsidies; the control and maintenance of health laboratories at Hobart and Launceston; the Acoustic Laboratory in Hobart; co-operation with the State Department of Health Services, in planning and taking measures to improve public health, including the anti-tuberculosis and anti-poliomyelitis campaigns, and National Fitness; the conduct of certain medical examinations; and the supervision of radio and television advertising and talks on medical matters.

The Commonwealth Acts administered by the Department include the *Acoustic Laboratories Act* 1948; *Foot and Mouth Disease Act* 1961; *Home Nursing Subsidy Act* 1956; *Medical Research Endowment Act* 1937; *National Fitness Act* 1941; *National Health Act* 1953-1961; *Quarantine Act* 1908-1961; *States Grants (Mental Institutions) Act* 1955; *States Grants (Milk for School Children) Act* 1950; *Therapeutic Substances Act* 1953-1959; *Tuberculosis Act* 1948.

Commonwealth National Health Payments

The following table shows the total Commonwealth payments for health benefits and services in Tasmania, since 1955-56:

Commonwealth National Health Payments (a)
(\$'000)

Benefit or Service	1955-56	1960-61	1961-62	1962-63	1963-64	1964-65
Hospital and Nursing Home Benefits	623	1,149	1,301	1,321	1,703	1,812
Medical Benefits	227	589	578	634	686	1,000
Free Milk Scheme	370	394	342	376	391	380
Medical Benefits for Pensioners ..	110	215	231	234	253	256
Pharmaceutical Benefits	403	1,037	1,091	1,454	1,234	1,706
Pharmaceutical Benefits for Pensioners	59	374	451	506	527	578
Tuberculosis Campaign (b) ..	440	428	462	442	442	438
Miscellaneous	37	52	55	56	65	66
Total	2,270	4,238	4,510	5,023	5,301	6,236

Note: Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) Payments from National Welfare Fund and minor items of expenditure from Consolidated Revenue Fund.

(b) Includes allowances to persons and reimbursements to State Government for approved expenditure.

Pensioner Medical Service

Free general practitioner medical treatment and pharmaceutical benefits are available to age, invalid, widow and service pensioners and their dependants if pensions were being received before 1st November, 1955. Those whose pensions were granted after that date receive benefits only if income in excess of their pensions (including income from property) does not exceed \$4 a week (single pensioner), \$8 a week (married pensioner) or \$10 a week (a married couple, where only one is a pensioner). All persons receiving tuberculosis allowances, and their dependants, are eligible. A fee may be charged by doctors for travelling and attendance outside normal surgery or visiting hours.

The Department of Social Services issues entitlement cards and acts as agent for the Department of Health.

Commonwealth Acoustic Laboratory

The main function of the Laboratory is the provision and maintenance of hearing aids, without charge, to deaf school and pre-school children, and to those whose hearing loss was discovered after leaving school, but who are still under 21 years of age. It also provides and maintains hearing aids on behalf of the Repatriation and other Commonwealth Departments; assists the Education Department in measuring deafness by providing and maintaining portable audiometers; tests the hearing of civil aircrew as required by international agreement; and makes independent tests on behalf of State and other authorities.

Quarantine

Quarantine, as administered by the Commonwealth, guards against the importation from overseas of three types of possible infection. The safeguards are as follows: human quarantine, which controls the movement of persons until it is apparent they are free of disease; animal quarantine, which controls the

importation of animals and animal products; and plant quarantine, which regulates the conditions of importation of all plants and plant products to exclude plant diseases, insect pests and weeds.

The administration of safeguards against infection from *interstate travel and trade* is left to the States unless Commonwealth action is necessary for the protection of a State.

National Health Benefits

General: A basic principle in the provision of medical and hospital benefits is Commonwealth support for voluntary insurance against the costs involved. Registered health insurance organisations collect contributions from members and refund a proportion of hospital or doctors' charges. They also act as paying agents for Commonwealth medical and hospital benefits, non-contributors to organisations receiving from the Commonwealth a reduced rate of hospital benefit and no medical benefit. Membership may be had in, and benefits received from, more than one organisation, but Commonwealth benefit is paid only once in respect of each claim.

A Special Account System provides an assured rate of benefit to contributors who would otherwise have been excluded because of organisations' rules relating to pre-existing ailments, chronic illnesses and maximum organisation benefits; payments made by organisations under this provision are re-imbursed by the Commonwealth.

Medical Benefits: These benefits are given for medical services detailed in the Schedule to the Commonwealth *National Health Act*. Combined Commonwealth and organisation benefits must not exceed 90 per cent of the fee charged for the service. For the most common form of service, a general practitioner consultation, a contributor receives a Commonwealth benefit of 80 cents and, in Tasmania, an organisation benefit as high as \$1 (organisation benefits are not uniform). In addition to the Commonwealth benefit expenditure shown in the previous table, the total medical benefit payments in Tasmania by the organisations amounted to \$1,214,000 in 1964-65.

Hospital Benefits: These benefits are paid for all patients by the Commonwealth at a minimum rate of 80 cents a day, but if a person contributes to an organisation, the Commonwealth benefit increases to \$2, as long as the organisation's contribution is not less than \$1.60 a day. The highest organisation benefit in Tasmania is \$10 a day (organisation benefits are not uniform) and the maximum rate of family contribution is 80 cents a week. In addition to the Commonwealth benefit expenditure shown in the previous table, the total hospital benefit payments in Tasmania by the organisations amounted to \$1,854,000 in 1964-65.

Health Insurance Organisations: Voluntary health insurance organisations operating in Tasmania in 1965-66, and providing both medical and hospital benefit insurance, were the Tasmanian Government Insurance Office; the Medical Benefits Fund of Australia Ltd.; the United Ancient Order of Druids Friendly Society; the St. Luke's Medical and Hospital Benefit Association; the United Friendly Societies Medical and Hospital Benefit Association; the Independent Order of Oddfellows of Tasmania; the Queenstown Medical Union Hospital and Medical Benefits Fund; and the A.N.A. Federal Health Benefits Company Ltd. In addition, there are four organisations which are not open to the general public but are, for example, restricted to employees of a particular firm.

Pharmaceutical Benefits: Under this scheme, drugs and medicines for patients, who are required to pay a flat charge of 50 cents, can be prescribed by a medical practitioner or by a hospital. Not all drugs and medicines can be supplied under this scheme, but the Health Department's list of approved pharmaceutical preparations is extensive.

Commonwealth-Assisted Health Organisations

Home Nursing Subsidy Scheme

The Scheme provides payments to assist the expansion of home nursing activities. To be eligible for a subsidy, bodies organising such activities must be non-profit making, must receive assistance from a State or local government body, and must employ registered nurses. The Commonwealth subsidy must not exceed any State grant. Eligible organisations established before 1956 receive up to \$2,000 for each qualified nurse employed; those established later than 1956 receive up to \$1,000.

National Heart Foundation of Australia

This was established to promote research in cardiovascular disease, to rehabilitate heart sufferers and to foster the dissemination of information about heart diseases. The State Division deals especially with rehabilitation and education.

Lady Gowrie Child Centre

This pre-school demonstration centre in Hobart was established by the Commonwealth in 1940. Its specialised function is demonstration and research and its programme is carried out under the supervision of the Federal Pre-School Officer in Canberra. It is concerned with a study of the factors promoting or retarding physical and mental health in young children and in demonstrating an educational health programme based on the developing needs of children aged three to six years. The Centre is used for observation by students of medicine, psychology, education, domestic science and nursing.

Other Organisations

Other organisations associated with public health and receiving Commonwealth grants are the Red Cross Blood Transfusion Service, the Royal Flying Doctor Service and the Tasmanian National Fitness Council; these have been dealt with in an earlier section.

LAW AND ORDER

Origin and Evolution of Tasmanian Law

Original Charters

By letters patent and Royal instructions issued by King George III in 1787, Captain Arthur Phillip was authorised and empowered to constitute and appoint justices of the peace, coroners, constables, and other necessary officers and ministers for the better administration of justice and for putting the law in execution in the colony of New South Wales (which then included what is now the State of Tasmania). A warrant for a Charter was issued to establish courts of civil and criminal jurisdiction. It provided that "Our present and all Our future governors and lieutenant governors and Our judge advocate for the time being shall be justices of the peace within the said place or settlement and that all and every such justice and justices of the peace shall have the same power to keep the peace, arrest, take bail, bind to good behaviour, suppress and punish riots, and do all other matters and things with respect to the-

inhabitants residing or being in the place or settlement aforesaid, as justices of the peace have within that part of the Kingdom of Great Britain called England within their respective jurisdictions". By a subsequent Charter in 1814 the Deputy Judge Advocate was added as a justice of the peace. Meanwhile, within a year of the occupation and settlement of Van Diemen's Land, warrants had been issued in 1804 appointing a justice of the peace for Van Diemen's Land and another justice at Port Dalrymple.

Supreme Court of Van Diemen's Land

In 1823 the Imperial Government passed an Act empowering King George IV as a temporary measure to institute a Court of Judicature to be styled the Supreme Court of Van Diemen's Land. It began its activities in May, 1824, with Sir John Lewes Pedder as Chief Justice. The Court superseded the Lieutenant Governor's Court, of civil jurisdiction only, which had been set up in 1815 under a Deputy Judge Advocate. In 1828 the Imperial Parliament passed the Australian Courts Act, which is usually known as the Huskisson Act. It empowered His Majesty, as a permanent measure, to establish the Supreme Court of Van Diemen's Land as a court of record having cognisance of all pleas, civil, criminal or mixed, and jurisdiction in all cases as fully as His Majesty's Courts at Westminster. The Court was constituted a Court of Oyer and Terminer and Gaol Delivery and was also granted equitable, admiralty and ecclesiastical jurisdiction.

All persons convicted of offences before the Court were to be liable to suffer the same pains, penalties and forfeitures as persons similarly convicted in England. Offences were to be prosecuted by information in the name of the Attorney General or other officers duly appointed by the Governor. By leave of the Court, however, a private person could bring a criminal information against another person.

The Huskisson Act also provided that all laws and statutes in force within the realm of England at the time of the passing of the Act should be applied in the administration of justice in the Courts of Van Diemen's Land so far as the same could be applied within the Colony. The Governor was given the power to resolve by ordinance such doubts as might arise as to the applicability of English law and to limit or modify such law. Until any such ordinance might be made, questions of doubt were to be settled by the Supreme Court.

Pursuant to the Huskisson Act, the Charter of Justice was granted by King William IV in 1831. By this Charter, the Supreme Court of Van Diemen's Land was created and constituted a Court of Record consisting of the Chief Justice and the Puisne Judge. The Huskisson Act had given the Judges power to make rules and orders regarding the practice and procedure in proceedings before the Court but, in 1854, the Legislature of Van Diemen's Land passed the *Common Law Procedure Act* which regulated all such matters and this Act was replaced many years later by the present statute, the *Supreme Court Civil Procedure Act* 1932.

Origin of Other Courts

The Huskisson Act empowered the legislature of Van Diemen's Land by laws or ordinances to institute Courts of Requests with power and authority to hear and determine, in a summary way, claims in debt or damages not exceeding \$20, to be held before a Commissioner to be appointed by His Majesty. In the exercise of this power the Colonial Legislature in 1829 passed an Act "to institute Courts of Requests" and since that date a number of statutes dealing with the subject have been passed. Courts of Requests are now regulated by the *Local Courts Act* 1896.

Courts of General Sessions have a similar history in some respects as their creation by the Colonial Legislature was authorised by the Huskisson Act and they too are now regulated by the *Local Courts Act* 1896.

Other Imperial Statutes that need to be mentioned in connection with the origin and evolution of Tasmanian law are the Australian Constitutions Act 1850, which empowered the Colonial Legislature to make provisions for the better administration of justice and for defining the constitution of the Courts of Law and Equity and of juries within the Colony; and also the Colonial Laws Validity Act 1865 which recognised that a Colonial Legislature at all times had full power within its jurisdiction to establish Courts of Judicature, and to abolish and reconstitute them, to alter their constitution, and to make provision for the administration of justice in them.

The Huskisson Act also empowered the Colonial Legislature to constitute Courts of Quarter Sessions with power and authority to try in a summary way all crimes, misdemeanours and other offences or misconduct not punishable by death. The Legislature of Van Diemen's Land accordingly instituted Courts of Quarter Sessions, which were also given jurisdiction to hear appeals from justices of the peace. In 1857 the Colonial Parliament passed a further Act providing for the appointment of Recorders to hold Courts of General Sessions as Courts of Criminal Jurisdiction. Two years earlier it had passed the *Magistrate's Summary Procedure Act* and the *Magistrate's Criminal Procedure Act*, which defined the duties of Justices of the Peace concerning summary convictions and orders and persons charged with criminal offences. These latter two Acts were subsequently superseded by the *Justice's Procedure Act* 1919 and finally by the *Justices Act* 1959. Courts of Quarter Sessions have long ceased to exist in Tasmania.

Juries

Tasmanian legislation regulating juries seems to have been first passed in 1830 although, for many years before that date, the introduction of the British system of trial by jury in civil and criminal cases had been persistently urged in the Colony.

The Hobart Town Gazette shows that juries had been employed in the colony for the trial of criminal cases from the establishment of the Supreme Court in 1824. Juries remain as the tribunal for trying indictable criminal cases and there is a limited right to a jury in civil cases, although in 1935 they were abolished for the purpose of trying motor-accident cases.

The liability for jury service now rests on men and women between the ages of 25 and 65 years, except that those twice convicted of any treason, felony or infamous crime are disqualified; however, a schedule to the Jury Act lists those who, because of their office or occupation, shall be held exempt from service (e.g. the Governor, members of parliament, heads of State Departments, &c.). The basic source from which jury lists are compiled are the Assembly rolls for State and Federal elections. At special jury sessions, Justices are required to strike out the names of persons who are disqualified to serve as jurors; exempt from serving as jurors; disabled by lunacy, imbecility of mind or physical infirmity; unable to read or write English; or of bad fame or repute. They are also required to add in the names of persons improperly omitted, and to correct all errors in the jury lists.

Description of Courts Having Jurisdiction in Tasmania

Courts of Petty Sessions

For every municipality in the State, there is a Court of Petty Sessions. The Court is constituted by a legally qualified Police Magistrate or by two or more lay Justices sitting in Petty Session. In major centres of population, a Court sits regularly and, in smaller centres, a Court sits at greater intervals or is convened as occasion requires. A Police Magistrate has power to do alone whatever may be done by a Court of Petty Sessions and any other act which may be done by two or more Justices in Petty Session.

A Court of Petty Sessions has jurisdiction over all summary offences and also over certain indictable offences at the option of the defendant. Under the *Justices Act* 1963, a defendant may choose summary trial in the Court of Petty Sessions when charged with the following crimes: (a) Escape or rescue; facilitating escape of a prisoner or harbouring an offender; assisting escape of a criminal lunatic; rescuing goods legally seized; making a false declaration (or statement). (b) Stealing; killing an animal with intent to steal; unlawfully branding an animal; obtaining goods by a false pretence; cheating; fraud in respect of payment for work; receiving stolen property. (In all these cases the value of the property concerned must exceed \$20 but not \$400. If the value does not exceed \$20 the defendant will be tried summarily. If it exceeds \$400 he will be committed for trial in the Supreme Court.) (c) Breaking a building other than a dwelling-house. (It is necessary for the defendant to be committed to the Supreme Court for trial where it is alleged that in the commission of the offence: property to the value of more than \$400 has been stolen; violence has been used or offered to any person in or about the building; the person had in his possession a gun, pistol, dagger, cosh, or other offensive weapon; explosives were used; or the defendant intended to commit a crime other than stealing.) (d) Forgery; uttering. (The complaint must be for an offence in respect of a cheque for not more than \$400.)

The following table shows the number of cases tried in the lower courts over a five-year period. (Minor traffic offences settled without court appearance are excluded.)

Cases Tried in Lower Courts

Offence			1960	1961	1962	1963	1964
Offences Against the Person	.. Males		444	435	516	575	455
	Females		12	14	8	21	9
Offences Against Property ..	.. Males		2,507	2,155	2,073	2,090	(a) 2,471
	Females		158	107	151	148	117
Offences Against the Currency	.. Males		14	20	22	62	92
	Females		1	2	6	2	4
Offences Against Good Order	.. Males		1,350	1,499	1,580	1,523	1,494
	Females		56	63	53	132	89
Offences Against Traffic Regulations	Males		13,585	14,838	17,800	20,384	20,596
	Females		493	676	747	762	971
All Other Offences (b) ..	.. Males		5,162	6,976	6,983	8,572	4,981
	Females		265	442	476	457	423
Total Offences ..	.. Males		23,062	25,923	28,974	33,206	30,089
	Females		985	1,304	1,441	1,522	1,613

(a) The increase in these offences may be partly due to amendments to the *Justices Act* 1963, which empowered lower courts to determine many cases which formerly would have been taken to the Supreme Court.

(b) Includes offences mainly against liquor, education, neglected children, revenue, and gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

The following table shows the cases tried and their results for 1964. (Minor traffic offences settled without court appearance are excluded.)

Lower Courts, 1964

Offence	Cases Tried	Convictions	Committed to Higher Courts	Ad-journed Sine Die	Dismissed or Withdrawn	Re-manded
MALES						
Offences Against the Person ..	455	274	64	44	67	6
Offences Against Property ..	2,471	1,707	506	115	130	13
Offences Against the Currency ..	92	53	27	7	5	..
Offences Against Good Order ..	1,494	1,258	3	94	128	11
Offences Against Traffic Regulations	20,596	18,338	..	835	1,411	12
All Other Offences (a)	4,981	3,785	5	249	939	3
Total	30,089	25,415	605	1,344	2,680	45
FEMALES						
Offences Against the Person ..	9	4	2	2	1	..
Offences Against Property ..	117	82	2	18	15	..
Offences Against the Currency ..	4	2	..	..	2	..
Offences Against Good Order ..	89	78	..	6	5	..
Offences Against Traffic Regulations	971	847	..	35	89	..
All Other Offences (a)	423	258	1	18	145	1
Total	1,613	1,271	5	79	257	1
PERSONS						
Total	31,702	26,686	610	1,423	2,937	46

(a) Includes offences mainly against liquor, education, neglected children, revenue, and gambling suppression laws, desertion of wives and children, perjury and subornation, and conspiracy.

Courts of Requests

These are constituted as courts with civil jurisdiction for each municipality in accordance with the authority given by the *Local Courts Act* 1896. Courts are held before a Commissioner, usually a legally qualified Police Magistrate. There is also power to appoint a substitute Commissioner. In the larger centres these Courts sit weekly but in smaller centres monthly, and in sparsely populated country areas four times a year.

Every Court has jurisdiction throughout the State but a plaintiff may lose costs if he brings his action in a Court other than the Court nearest to which the defendant lives or carries on business.

The jurisdiction of a Court of Requests, which is a court of record, covers all personal actions where the debt or damage claimed does not exceed the maximum amount fixed under the Act (\$1,500 before a legally qualified Commissioner and \$1,000 in any other case).

The Commissioner alone determines all questions of fact as well as of law and his decision is the judgement of the Court, unless a jury is required. In any action either party may require a jury as of right and there is power for the Commissioner to order that an action be tried by a jury, even though neither party has required it.

Law and equity are administered concurrently in the Court and the general principles of practice in the Supreme Court are adopted and applied in cases not expressly provided for in the Act or Rules.

Courts of General Sessions

A Court of General Sessions with civil jurisdiction is constituted under the *Local Courts Act* 1896 for each municipality of the State. It is a court of civil jurisdiction and does not deal with offences similar to those tried in Courts of Petty Sessions. The cities are excluded, civil actions there being dealt with by Courts of Requests. A Court of General Sessions is constituted by a Chairman (elected by the Justices for the municipality) and at least one other Justice. All questions are decided by a majority of the Justices present and, if they are equally divided in opinion, the Chairman has both a deliberative and casting vote. The Court sits once a month if there is business requiring its attention.

A Court of General Sessions has jurisdiction to deal with civil proceedings of a minor nature and the limit of the Court's jurisdiction has been fixed at the sum of \$100.

Litigation in Civil Courts

The following table shows the number of plaints entered and writs issued in the lower and higher Tasmanian courts over a three-year period:

Litigation in Civil Courts

Particulars	1962		1963		1964	
	Number	Amount	Number	Amount	Number	Amount
Lower Courts—		\$'000		\$'000		\$'000
Plaints Entered	38,673	2,234	40,574	2,298	40,864	2,575
Verdicts for Plaintiff ..	19,635	1,183	10,097	574	18,697	1,253
Higher Courts—						
Writs Issued	1,734	(a)	1,761	(a)	1,733	(a)

(a) Not available.

The Supreme Court of Tasmania

The Supreme Court of Tasmania is constituted by the Chief Justice and four Puisne Judges. Regular sittings of the Court are held at Hobart, Launceston, Devonport and Burnie, although the Court is empowered to sit and act at any time and at any place for the exercise of any part of the jurisdiction and business of the Court.

The Court has jurisdiction over all causes, both civil and criminal, except those reserved to the High Court of Australia under the Commonwealth Constitution. It also exercises federal jurisdiction in matters such as matrimonial causes, bankruptcy, &c. Its civil jurisdiction extends to all causes of action, whatever the amount involved may be, and its criminal jurisdiction includes the trial of all indictable offences. In civil cases the Court has power to call in the aid of one or more assessors specially qualified to assist in the trial of the action, but is not bound by the opinion or advice of any such assessor.

There is an appeal to the Supreme Court of Tasmania from all inferior courts, and from many statutory tribunals.

Law and equity are administered concurrently in the Court which is enjoined to grant, either absolutely or on such terms and conditions as seem just, all such remedies as any of the parties may be entitled to so that, as far as possible, all matters in controversy between the parties may be completely and finally determined, and a multiplicity of legal proceedings avoided. The Judges, on the recommendation of the Rules Committee, are empowered to make rules regulating the practice and procedure of all proceedings in the Court.

The jurisdiction of the Court is usually exercised by a Judge of the Court and from his decision there is an appeal to the Full Court of the Supreme Court of Tasmania. A Full Court consists of two or more Judges of the Court. The Full Court is also a Court of Criminal Appeal under the Criminal Code. The latter is a Court to which appeals may be brought by the Crown or by an accused person where an indictable offence is involved. In some cases, there is an appeal as of right but, in other cases, special leave is required.

The following table shows the number of cases tried in the higher courts, and the number of convictions and remands during 1964.

Supreme Court Actions, 1964

Offence	Cases Tried		Convictions (a)		Remands	
	M	F	M	F	M	F
Offences Against the Person—						
Attempted Murder	3	..	2	..	1	..
Manslaughter (including Offences arising from Traffic Accidents)	4	1	4	1	..	..
Robbery with Violence	10	..	8	..	2	..
Wounding and Grievous Bodily Harm .. .. .	..	1	..	1	..	..
Common Assault	1	..	..	..	..	..
Rape	6	..	3	..	..	..
Indecent Assault	3	..	3	..	..	..
Assault with Indecent Intent	1	..	1	..	..	..
Defilement and Unlawful Carnal Knowledge	16	..	16	..	..	..
Indecent Practices between Male Persons	7	..	6	..	..	..
Abduction	2	..	2	..	..	..
Dangerous Driving	1	..	1	..	..	..
Offences Against Property—						
Burglary or Housebreaking	47	..	44	..	2	..
Breaking a Building other than a Dwelling	36	..	32	..	..	..
Stealing from the Person	20	..	16	..	..	..
Embezzlement and Stealing by Servants	4	..	3	..	..	..
Receiving	7	..	5	..	..	..
Obtaining Goods by False Pretences	13	..	8	..	1	..
Arson	3	..	3	..	..	..
Forgery and Offences Against the Currency—						
Forgery and Uttering Offences	10	..	10	..	..	..
Offences Against Good Order—						
Escape from Custody	3	..	3	..	..	..
All Other Offences—						
Perjury and Subornation	5	1	..	..	..	..
Total (b)	202	3	170	2	6	..

(a) The difference between "cases tried" and "convictions and remands", is the number found not guilty.

(b) There are fewer Supreme Court cases tried than the number committed from the lower courts would lead one to expect. This is because (i) *complaints* often embrace several *offences* in the lower courts; (ii) some cases are not proceeded with.

The following table shows the number of convictions in the higher courts over a five-year period:

Supreme Court Cases—Convictions

Offence	1960	1961	1962	1963	1964
Offences Against the Person	39	37	54	29	48
Offences Against Property	230	246	204	237	(a) 111
Forgery and Offences Against the Currency	13	11	7	8	10
Offences Against Good Order	6	10	4	13	3
All Other Offences	7	..	1	6	..
Total	295	304	270	293	(a) 172

(a) A 1963 amendment to the Justice Act provided that if the amount involved in an offence against property was less than \$400, the defendant could elect to be tried in a magistrate's court. This had the effect of reducing the number of cases coming before the judges' courts.

The High Court of Australia

This Court was created by the Commonwealth Constitution and it has both original and appellate jurisdiction. It is constituted by the Chief Justice of Australia and six other Justices.

There is an appeal as of right to the High Court from the Supreme Court of the State in any civil matter where the sum involved amounts to at least \$3,000 or where the decision under appeal affects the status of any person under the laws relating to aliens, marriage, divorce, bankruptcy or insolvency. In other cases (including criminal cases) there is an appeal to the High Court if leave or special leave is granted.

Sittings of the High Court of Australia are held in each capital city and one sitting is held in Hobart each year if the volume of business warrants it. Tasmanian cases otherwise are usually heard either in Melbourne or Sydney.

Privy Council

An appeal lies direct from the Supreme Court to the Privy Council in a civil action where the amount involved is not less than \$2,000 and in other cases an appeal may be heard by special leave. Special leave may also be obtained to appeal to the Privy Council from a decision of the High Court of Australia but there are restrictions where the interpretation of the Commonwealth Constitution is involved.

Tribunals

There are many tribunals which are not true courts and the powers and functions of these depend upon the detailed provisions of the particular statute under which they operate. Certain specialised Courts have been created by statute. For example, there is the Wardens' Court constituted under the *Mining Act 1929* and the Licensing Court constituted under the *Licensing Act 1932*.

Coroner's Courts

Coroners are appointed by the Governor and have jurisdiction throughout the State. Under the *Coroner's Act 1957*, a coroner may hold an inquest: (a) concerning the manner of death of any person who has died a violent or unnatural death, who died suddenly, or who died in a prison, hospital or mental institution; at the direction of the Attorney General, he may also be required to hold an inquest concerning any death; (b) the cause and origin of any fire if the Attorney General has directed, or has approved a request by the owner or insurer of the property; or at the request of the Fire Brigades Commission or the Rural Fires Board.

The coroner usually acts alone in holding an inquest, but in the case of a death, either the Attorney General or the relatives of the deceased may request that a four or six man jury be empanelled. The inquest may be dispensed with and post mortem by a doctor substituted, unless the circumstances of death make an inquest mandatory under the Act.

The duty of the court is to determine who the deceased was, and the circumstances by which he came to his death. Medical practitioners and other persons may be summoned to give evidence. Viewing of the body is not essential but in the case of the death of an infant in a nursing home, the coroner may also enquire generally into the conditions and running of the institution. On the evidence submitted at the inquest, the coroner can order a person to be committed to the Supreme Court and can grant bail. In the case of murder, a coroner can issue a warrant for apprehension.

Children's Courts

Under provision of the *Child Welfare Act* 1960, Children's Courts are established to deal with offenders under the age of 17 years. Special magistrates may be appointed by the Governor to adjudicate in these Courts and one such Magistrate is sufficient to constitute a Court. In the absence of a Special Magistrate, the Court may be constituted by a Police Magistrate or two Justices.

A Children's Court is a court of summary jurisdiction and, in the case of children under 14 years of age, it may hear and determine all indictable offences except murder, attempt to murder, manslaughter, and wounding with intent to do grievous bodily harm. When children over this age are charged with an indictable offence they, or their parents on their behalf, may elect to be dealt with by the Court in a summary way instead of being tried by a jury, except when the offences are murder, attempt to murder, manslaughter, rape, wounding with intent to do grievous bodily harm, and robbery with violence.

It is a requirement of the *Child Welfare Act* that before a court may finally determine the case of any child appearing before it, a Child Welfare Officer must be given the opportunity to investigate the circumstances of the case and to report on it. This aspect of child welfare work is important for three reasons:

- (i) these investigations often uncover underlying causes for delinquency in the child's background and indicate the need for continued work with the child;
- (ii) the reports serve as a guide to the courts, and in over 90 per cent of cases, the treatment of offenders follows the recommendations made;
- (iii) information gained about the child in the initial investigation is the basis of the methods to be used should the court place on the Social Welfare Department the responsibility of continued supervision; at 30th June, 1965, there were 265 children under the supervision of Child Welfare Officers as a result of Supervision Orders imposed by the Courts.

Statistics of offences for which children were reported appear in this chapter under "Department of Social Welfare".

Bankruptcy

Under the Federal *Bankruptcy Act* 1924-1960 which came into operation on 1st August, 1928, Tasmania was proclaimed a bankruptcy district. A Federal Court of Bankruptcy was established with jurisdiction throughout Australia.

This jurisdiction, however, is exercised only in New South Wales and Victoria while the Supreme Court of Tasmania exercises federal jurisdiction in bankruptcy throughout the State.

If any person is unable to meet his debts, he may voluntarily file a petition with the Court requesting sequestration of his estate, or his creditors may apply for a compulsory sequestration, provided that the debts to the petitioning creditor or creditors amount to not less than \$100. After sequestration:

- (i) the property of the bankrupt vests in an Official Receiver (who acts under the general authority of the Federal Attorney General and is controlled by the Court) for division amongst the creditors; or
- (ii) the bankrupt may compound with his creditors and enter into a scheme of arrangement, subject to Court approval.

Part XI of the Bankruptcy Act makes provision, without sequestration, for composition, schemes of arrangement and deeds of assignment while Part XII provides for deeds of arrangement. Under Part XI, the debtor may call a meeting of his creditors and either compound with them to pay a certain sum in the \$ as full settlement of his debts or enter into a scheme of arrangement allowing him a specified time in which to pay. Alternatively, under Part XII, his creditors may require him to execute a deed of assignment by which control of his affairs passes to a trustee registered under the Act, or to file a petition in bankruptcy.

The following table shows the number of bankruptcies of the various types together with the assets and liabilities of debtors:

Tasmania—Bankruptcy Proceedings

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
Sequestration Orders and Orders for Administration of Deceased Debtors' Estates—					
Number	91	76	93	116	123
Liabilities \$	594,688	452,266	507,006	767,510	499,152
Assets \$	267,692	179,044	201,802	275,756	224,104
Deeds of Assignment, Compositions and Schemes under Part XI—					
Number	1	1	2	2	..
Liabilities \$	31,360	28,822	21,216	62,114	..
Assets \$	26,924	25,910	35,378	46,980	..
Deeds of Arrangement under Part XII—					
Number	4	4	3	1	3
Liabilities \$	120,444	94,348	84,120	14,860	43,660
Assets \$	41,444	45,726	91,656	9,772	40,474
Total—					
Number	96	81	98	119	126
Liabilities \$	746,492	575,436	612,342	844,484	542,812
Assets \$	336,060	250,680	328,836	332,508	264,578

The Licensing Court

Prior to 1953 there were forty-nine licensing courts in Tasmania (one for each municipality). They consisted of a Police Magistrate as chairman and two local Justices of the Peace.

With a view to obtaining uniformity of standards and to improving accommodation throughout the State, amendments in 1952 were made to the *Licensing Act* 1932. These made provision for the appointment of a Licensing

Court to consist of a Police Magistrate as chairman and two Government nominees. The Act also empowered the Court to determine the minimum standards of service, management, accommodation, structure and equipment which should apply to hotels, and also the qualifications required by persons holding or applying for licences. The new Court came into being on the 28th January, 1953, and immediately set about the task of improving the standards of hotels throughout the State.

Since then the standard of hotels throughout Tasmania has improved.

The following table shows the total bedroom accommodation available to the public during recent years:

Standard of Accommodation—Hotels (a)

Date	Total Number of Bedrooms	Number of Bedrooms Furnished With—	
		Private Bath, Showers, Toilets and Hand-basins	Handbasins with Hot and Cold Running Water
31st Dec., 1955 ..	3,709	124	1,353
30th June, 1960 ..	3,766	338	2,780
1961 ..	3,687	420	2,897
1962 ..	3,672	576	2,859
1963 ..	3,726	618	2,997
1964 ..	3,774	638	3,028
1965 ..	3,840	721	3,013

(a) Includes licensed motels.

Every hotel in Tasmania is visited annually by a member of the Court and the Court's inspectors and the public health inspector make a thorough examination of each hotel prior to the annual sittings at which renewals of licences are considered. Reports are furnished for the information of the Court and the Tourist Department. An officer of the Fire Brigades Commission also carries out an annual inspection to ensure that each hotel complies with the requirements of the Commission.

The Tasmanian *Licensing Act* contains provisions relating to the sale of liquor to minors and sale during prohibited hours. Liquor may be sold between 10 a.m. and 10 p.m. Monday to Saturday inclusive, and on Sunday it may be supplied for consumption with a bona fide meal during such hours as may be fixed by the Court. It is the duty of every licensee to receive or provide for any person lawfully requiring any meal or refreshments.

The following table shows the licences and club registrations operative:

Licensed Hotels, Clubs and Other Licensed Dealers

At 30th June	Hotels and Motels	Public Houses (a)	Railway Refreshment Rooms	Wholesale Licences	Registered Clubs	Total
1955 ..	291	7	4	(b)	87	389
1963 ..	273	5	1	28	121	428
1964 ..	273	5	1	28	128	435
1965 ..	270	5	2	28	130	435

(a) These licensed premises do not provide accommodation.

(b) Issued by the Treasury until 1960. Wholesale merchants are permitted to sell to the public in 2-gallon lots.

Permits may be granted for the consumption of liquor on licensed premises between 10 p.m. and midnight at special functions. Each application has to be investigated by a police officer and is reported upon to the Court. The majority of applications for late permits are for Friday and Saturday nights. They are refused if it appears that the social function is likely to become a public event. Those granted by the Court are in addition to the first twelve in respect of each hotel which may be granted annually by Justices or Police Magistrates. In 1964-65, the Licensing Court granted 6,030 late permits while a further 2,619 permits were granted by Police Magistrates and Local Justices.

The following table shows the estimated consumption of alcoholic liquor in Tasmania over a five-year period:

Estimated Consumption of Beer, Wine and Spirits

Year	Beer		Wine		Spirits	
	Total	Per Head of Mean Population	Total (a)	Per Head of Mean Population	Total	Per Head of Mean Population
	'000 Gallons	Gallons	'000 Gallons	Gallons	'000 Proof Gallons	Proof Gallons
1960-61	6,587	18.82	421	1.20	132	0.38
1961-62	6,632	18.58	416	1.17	134	0.37
1962-63	6,618	18.28	422	1.17	138	0.38
1963-64	6,609	18.05	427	1.17	140	0.38
1964-65	(b)	(b)	429	1.17	143	0.39

(a) Wholesale sales of resident distributors.

(b) Not available for publication.

Comparative Australian consumption figures per head for 1963-64 were: beer, 23.5 gallons; wine, 1.2 gallons; spirits, 0.3 proof gallons.

Prisons

General

The establishment, regulation and conduct of prisons and the custody of prisoners in Tasmania are provided for under the *Prison Act* 1868 and 1908. Under the Act, a Controller of Prisons is appointed by the Governor and is responsible for the management of the main prison as well as the custody of prisoners.

Two justices are appointed each year to act as Visiting Justices. They visit the prison at least once per month to examine the treatment, behaviour and condition of prisoners, and the condition of the prison. They hear complaints with regard to offences committed in the gaol, and have power to punish offenders either by solitary confinement or by extending the term of imprisonment.

The main prison in Tasmania is at Risdon near Hobart, and has, as an outstation, the Prison Farm at Hayes in the Derwent Valley. The prison at Launceston is limited in function, receiving only persons on remand or sentenced for periods not exceeding seven days.

Prisoners Received and Discharged

In the following tables giving details of prisoners received into and discharged from Tasmanian prisons, no distinction is made between those on remand and those convicted and sentenced to imprisonment.

The next table shows the number of prisoners received into and discharged from Tasmanian prisons in 1964-65. (Figures for H.M. Prison, Risdon, include those held in custody at the Hayes prison farm.)

Prisoners Received and Discharged, 1964-65

Particulars	H.M. Prison, Risdon		H.M. Prison, Launceston		Total	
	Males	Females	Males	Females	Males	Females
In Custody 30.6.64	232	6	2	..	234	6
Received 1964-65 ..	(a) 814	(a) 32	(b) 148	(b) 15	(c) 962	(c) 47
Discharged 1964-65	834	35	148	15	982	50
In Custody 30.6.65	212	3	2	..	214	3

(a) Includes transfers from H.M. Prison, Launceston: males 218; females 2.

(b) Excludes transfers to H.M. Prison, Risdon: males 218; females 2.

(c) *Net* receipts, i.e. transfers from Launceston to Risdon counted as Risdon receipts only.

Age of Prisoners

Young offenders account for a high and rising proportion of receipts, as in other countries. The proportion of male prisoners received in the under 25 year age group was 50 per cent in 1960-61; 51 per cent in 1961-62; 49 per cent in 1962-63; 55 per cent in 1963-64, and 59 per cent in 1964-65. The following table shows the ages of prisoners received over a five-year period:

Ages of Prisoners Received

Year	Age Group (in Years)							Total
	17 and under	18 and 19	20-24	25-29	30-39	40-49	50-59	60 and over

MALES

1960-61	102	164	259	123	219	120	51	16	1,054
1961-62	75	181	253	110	201	112	45	15	992
1962-63	98	158	196	97	201	126	30	13	919
1963-64	114	189	288	153	148	130	30	19	1,071
1964-65	89	207	270	103	145	94	41	13	962

FEMALES

1960-61	14	18	15	1	7	4	..	..	59
1961-62	6	16	9	8	8	9	4	..	60
1962-63	7	10	7	8	9	1	1	1	44
1963-64	3	13	14	11	13	4	3	1	62
1964-65	11	10	11	3	3	5	2	2	47

PERSONS

1960-61	116	182	274	124	226	124	51	16	1,113
1961-62	81	197	262	118	209	121	49	15	1,052
1962-63	105	168	203	105	210	127	31	14	963
1963-64	117	202	302	164	161	134	33	20	1,133
1964-65	100	217	281	106	148	99	43	15	1,009

Prisoners' Offences

Forty-two per cent of the offences for which people were gaol'd in 1964-65 involved "stealing" and "breaking and entering". The following table shows the offences for which prisoners were received:

Offences for Which Prisoners Were Received at H.M. Prison, Risdon, 1964-65

Offence	Offences By—		Offences	
	Males	Females	Total	Proportion of all Offences
	No.	No.	No.	Per Cent
Stealing	345	15	360	27.8
Breaking and Entering	177	..	177	13.7
Unlawful Use, Motor Vehicle	124	..	124	9.6
Vagrancy	106	14	120	9.3
False Pretences	88	3	91	7.0
Housebreaking	47	..	47	3.6
Breach of Bond	34	3	37	2.9
Breach of Traffic Act.	31	..	31	2.4
Assault	29	1	30	2.3
Failure to Pay Fine	25	..	25	1.9
Damage to Property	24	..	24	1.9
Assaulting Police Officer	19	..	19	1.5
Maintenance	18	..	18	1.4
Receiving	17	..	17	1.3
Indecent Assault	14	..	14	1.1
Forgery	14	..	14	1.1
Uttering	13	..	13	1.0
Resisting Arrest	13	..	13	1.0
All Other	118	1	119	9.2
Total (a)	1,256	37	1,293	100.0

(a) The number of offences exceeds the number of prisoners received since some prisoners were charged with, or convicted of, multiple offences.

Risdon Gaol

The Risdon Gaol, with provision for 324 prisoners, was opened in November, 1960, when male prisoners were transferred from the old Hobart Gaol. Subsequently, the Female Prison, the first entirely separate gaol for women to be built in the State, was opened in June, 1963, also at Risdon. The closure of the Hobart Gaol, with a maximum capacity of 245 prisoners, has considerably eased the burden of administration associated with congested conditions. The following table shows the daily average and highest number of prisoners at Risdon Gaol over a five-year period:

Number of Prisoners at H.M. Prison, Risdon (a)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Prisoners—					
Maximum Number	247	261	265	260	273
Daily Average	218	246	247	238	236

(a) Includes Hayes Prison Farm.

The following table shows the number of previous convictions recorded against prisoners received at Risdon over a five-year period, and a corresponding percentage distribution:

**Prisoners Received in H.M. Prison, Risdon, Classified According to
Number of Previous Convictions**

Number of Previous Convictions	1960-61	1961-62	1962-63	1963-64	1964-65
PRISONERS RECEIVED					
None	266	332	312	331	241
One	101	52	66	95	95
Two	81	83	72	80	68
Three or More	473	451	386	450	442
Total	921	918	836	956	846
PROPORTION OF TOTAL (PER CENT)					
None	28.9	36.2	37.3	34.6	28.5
One	11.0	5.7	7.9	9.9	11.2
Two	8.8	9.0	8.6	8.4	8.0
Three or More	51.3	49.1	46.2	47.1	52.3
Total	100.0	100.0	100.0	100.0	100.0

Under the *Prison Act*, the Governor of the State may commute the death sentence to a term of imprisonment. The death sentence has not been carried out in Tasmania since 1946.

Good conduct remissions of up to 25 per cent of sentence for prisoners sentenced to over three months may be granted by the Governor of the State on the Controller's recommendation. Prisoners may also be paroled on licence for the balance of their sentences.

The Indeterminate Sentences Board is appointed by the Governor of the State. It reviews the cases of prisoners serving indeterminate sentences, and those who have been sentenced to more than three months' imprisonment if they have been sentenced twice previously. Such prisoners may be released on a two-year licence and are subject to any conditions the Board may recommend, e.g. the supervision of a probation officer.

The following summary table shows the number of prisoners under the supervision of the Indeterminate Sentences Board:

Prisoners with Indeterminate Sentences at H.M. Prison, Risdon

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Received During Year ..	22	36	30	25	18
Discharged During Year ..	21	26	38	25	24
In Custody at 30th June ..	14	24	16	16	10

The Risdon Gaol incorporates workshops which serve as a basis for vocational and trade training in such subjects as woodworking, tailoring, sheet metal working, bootmaking and breadmaking. Educational services include instruction during working hours for illiterate and semi-literate prisoners; tuition, on two evenings weekly, in general academic subjects to Secondary Schools Certificate standard; correspondence courses in University, Matriculation, Schools Board and various technical and commercial subjects;

tuition in English for migrants; and training three nights weekly in art and allied subjects. A Classification Committee interviews all prisoners on admission and decides on each individual's training programme.

Facilities do not permit a wide range of hobbies, but groups meet regularly for wood carving, toy making, chess and dramatics. Feature and documentary films are screened monthly, and concert parties visit the prison regularly. A comprehensive sports programme is conducted, including competitions in cricket, volley ball and basketball.

The State Library of Tasmania helps with the prison library and library officers advise the prisoners on book selection each weekend. 5,000 volumes are immediately available, and a request programme operates. Over 650 books are borrowed from the library weekly.

Prison industries produce articles for Government departments and institutions. The following table shows the receipts for prison industries over a five-year period. The operation of a new laundry in 1963 has increased receipts from sales and services but the amounts are not a true indication of value to the government, as laundry is processed at a nominal figure for hospitals and other government institutions.

Gaol Suspense Account (Prison Industries)
(£)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Receipts (a)	25,667	33,216	54,431	58,881	66,818
Paid to Consolidated Revenue..	1,706	..	(b) 3,638	6,827	10,944

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

(b) Includes surplus from 1960-61 and 1961-62.

Hayes Prison Farm

The Prison Farm at Hayes ("Kilderry") is an outstation of the Risdon Prison. It aims to prepare men for a normal way of life through the operation of the honour system. Up to fifty prisoners who are regarded as being worthy of trust, regardless of their age, length of sentence or type of offence, are held here.

The following table shows the receipts from sale of farm produce and the amounts paid to Consolidated Revenue over a five-year period:

Gaol Farm Suspense Account
(£)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Receipts (a)	22,233	21,839	28,229	34,429	54,742
Paid to Consolidated Revenue..	7,529	..	(b) 6,443	1,385	4,992

(a) Maintenance, material and capital charges are met from receipts, the balance being paid to Consolidated Revenue.

(b) Includes surplus from 1960-61 and 1961-62.

The 1,400 acre property has been developed into a model farm with a great diversity of farming activities. These include 65 acres for vegetables; a registered stud of Friesian cattle, and Herefords, which provide milk, butter and veal; about 2,000 sheep for wool and fat lambs; a registered herd of Berkshire pigs for bacon and pork; poultry, mainly for eggs; cropping of wheat, oats, lucerne and hay; breeding of children's ponies; and hot house cultivation, to provide out-of-season tomatoes, &c. All prison requirements of milk and butter are met and the surplus is supplied to the Lachlan Park Hospital. Building construction activities and machinery maintenance workshops also provide employment, but the range of prison industries is more limited than at Risdon. Similar educational and recreational facilities are provided.

Adult Probation Service

The Service deals with the problems of re-settlement and re-employment of discharged prisoners. There is a counselling and guidance service so that ex-prisoners may be placed in occupations suited to their talents.

The Hobart and District Civic Rehabilitation Council, the Prisoners Aid Society, the City Mission, the Society of St. Vincent de Paul, chaplains of the various Churches, and other voluntary aid organisations, give material and moral assistance to prisoners and discharged men.

Development of the Tasmanian Police Force from 1804

History

The development of an organised Police Force in Tasmania commenced when Governor Collins arrived, bringing with him a body of civilians known as the "Night Watch" which had been formed at the settlement in Port Phillip Bay. On the 5th of July, 1804, Collins instructed that at least two of the Night Watch were to be on duty at night because of the number of robberies being committed. The Watch was disbanded two years later, Collins recognising that it was necessary to have police able to carry out their duty in a proper manner. At Port Dalrymple, now Launceston, which was then separately administered, the Lieutenant Governor, on the 19th of November, 1804, appointed Thomas Massey as Chief Constable, with three subordinate constables.

Early Conditions

For a number of years police were paid no salary apart from a small emolument for the Chief Constable, but were given rations, clothing and spirits. Rum was a standard currency in Australia's early history but transport problems were largely responsible for its withdrawal as a means of paying police. The distribution of the rum was often delayed for some months, which had unfortunate effects when it was distributed—either the police became drunk and incapable of carrying out their duty, or they sold it and, in so doing, became unlicensed dealers in spirits, thus depriving the Colony of revenue upon which it was largely dependent. Commissioner Bigge in his enquiry into the state of the police in 1820, critically commented upon the practice and it was abandoned. The allowances paid to police were not sufficient for them to maintain themselves and in most cases, they either worked part-time for someone else or owned their own farm. Thomas Massey told Bigge that he had been a Chief Constable for sixteen years, had received only an allowance of spirits and rations, and relied upon his farming activities for support.

In 1812, Port Dalrymple became a dependency of Hobart Town and in 1815, all police were placed under the control of Adolarius Humphrey, who was appointed Police Magistrate. He also became a member of the Executive Council.

During the first forty years of the Force's existence, constables were hard to obtain. The inducement held out to free men was insufficient so recruits consisted largely of convicts on ticket of leave. Crime was rampant in the early history of the Colony and a series of newspaper articles written in 1879 said that, in the Hobart Town of 1829, murders, burglaries and lawlessness were rife. Even if police had been dedicated to the service, it is doubtful if they could have coped with the amount of crime which was being committed, as a large part of the duties they were required to carry out were penal (i.e. concerned with punishment). Absconding convicts, many of whom turned bushranger and were the terror of the country, also posed a problem for police; a special branch, the "Field Police", was appointed to hunt them down. Some idea of the number of bushrangers roaming the countryside can be obtained from a report written by Chief Police Magistrate Burgess as late as 1851, when he said "that during the past three or four months of the year, no fewer than eighty-nine out of the ninety-one at large had been captured by the concerted effort of field and other police". Indeed so serious was the incidence, that black trackers were brought from New South Wales and retained in the Colony.

Arthur's Reforms

Lieutenant-Governor Arthur, in 1828, largely upon the recommendation of his predecessor, Sorell, decided it was time that the Police Force be placed upon a better basis. He was very conscious that he had been put in charge of a colony whose main purpose was to be a large gaol and the largest single element of whose population was an increasing body of convicts. He paid particular attention to the police during his general reorganisation of the Government, having commented on one occasion that "there was no Branch of the Public Service more deficient than Police". He recognised that police should be paid a salary and the practice of working their farmlands, with police duties as a subsidiary consideration, should be abolished. At this time, the Police Magistrate was also responsible for many penal duties, but was relieved of most of these when Arthur appointed a Principal Superintendent of Convicts. The establishment of the Force had grown since the settlement of the Colony. In Hobart, there were one Superintendent, five District Constables and sixty Petty Constables. At Launceston there were a Superintendent, a Chief Constable and twenty-two Petty Constables.

Arthur also recommended that the Colony be divided into nine Police Districts with headquarters at Hobart and district headquarters at Launceston, New Norfolk, Oatlands, Campbell Town, Norfolk Plains, Richmond, Bothwell, Brighton, Great Swanport and Georgetown. A Police Magistrate was to be appointed for each district, subject to the control of the Chief Police Magistrate at Hobart.

Municipal Control

Arthur's form of control remained in the Colony until 1856 when responsible government was introduced, and it was decided that the control of police be at first vested in the municipalities of Hobart and Launceston. By degrees, following the passing of the *Rural Municipalities Act* 1858, the other municipalities adopted the scheme. Despite this, instances did occur where no

municipal authority had yet been brought into being and, where this happened, the areas were policed by a Territorial Force appointed by the Government. Both Forces, although distinct for all practical purposes, were subject to central control by the former Chief Police Magistrate, who became known as the Inspector of Police.

It seemed inevitable that some dissension would arise between the two bodies of police. This was referred to in the Annual Report of 1887 which observed that a general understanding had been arrived at between the Territorials and several municipal bodies, especially those at Hobart and Launceston, that each should not interfere with nor encroach upon the operations of the other. The same report also gave an indication of impending centralisation. This did not come about until 1898, and only then after much opposition from some of the municipalities which strove to maintain control. Prior to centralisation, there were twenty-one Municipal Police Districts, each with a Superintendent. The number of police employed by the municipalities at this time varied from forty-three at Hobart and twenty-six at Launceston to three at a number of centres. There were eight Territorial Police Districts.

Amalgamation of Forces

The first Commissioner of Police under centralisation was George Richardson. Amalgamation reduced the total number of districts to fourteen and brought about the need for fewer senior officers. (Eleven Superintendents accepted a subordinate appointment and some who were also Council Clerks ceased their police duties.) The establishment of the Force was also reduced from 270 to 246. Rifles were issued to police at Hobart and Launceston and they were required to attend drill regularly and be instructed in attack formation and firing exercises.

Police Duties and Conditions of Employment

The police were required to carry out many official duties which were not connected with the maintenance of law and order. A list compiled in 1899 relates forty duties which were being undertaken. Constables were appointed as Assistant Harbour Master, Bailiff of Crown Land and of Courts of Requests, and had duties which included codlin moth control, detection of adulterated measures, tide watching for the Customs, town surveying, valuations under the Assessment Act, and many others.

With the introduction of the new system, police were granted fourteen days' annual leave, although it was some years before they were allowed other time off. This started with one day a month off duty and then two days, a system which remained until the early 1940's when first a forty-four hour week was introduced and then a forty-hour week. In the mid-forties, the Government increased its contribution to the Police Provident Fund from a minor payment to pound for pound. Members appointed after March, 1964 contribute to the State Superannuation Fund.

Transport

Transport in the Department has changed since the early days. For the first 120 years, it was either footwork, or by bullock or horse. The horse was essential to efficiency, especially during the bushranger period. Police were required to purchase their own mounts, and many constables in country stations had two. Finance for purchase could be obtained through the Police Provident Fund, repayable by instalment. A forage allowance was paid by the Department.

Mechanisation started in the 1920's when, in approved cases, police were permitted to buy their own motor cycles and received an allowance for their use. Horses, however, still predominated and the cycle was the exception rather than the rule. The last mounted trooper was at Fitzgerald and his horse was disposed of in 1940. In 1935, fifty-four police motor cycles with side cars replaced privately owned vehicles. The first police car was a chain-driven Talbot, which was transferred from the Premier's Department in the mid-1920's. Little use was made of cars until about 1940, but a modern fleet is now maintained, with departmental repair depots at Hobart and Launceston.

Organisation

The Minister for Police is the responsible parliamentary head of the Department and the Commissioner of Police is the permanent head. He is assisted by the Deputy Commissioner. There are four Superintendents who handle domestic matters and general enforcement in the Southern, Northern, North-Western and Central districts and two in charge of the State-wide Criminal Investigation and Traffic Branches respectively. Inspectors, Sergeants, Senior Constables and Constables comprise the rest of the Force.

Radio Communications (Police Networks)

The development of radio communications started in 1949 and base stations were installed at Hobart and Launceston in 1951. These were purely for use by localised cars, three being at Hobart and two at Launceston. Burnie and Devonport followed two years later and subsequently New Norfolk. In 1954, the interstate system was introduced, giving a direct radio link with all Australian States. The intrastate hook-up took place in 1958, first between Hobart, Launceston and Burnie, and then with Queenstown in 1963. Oatlands and Deloraine were recently added to the group of base stations. There are over 100 mobile sets installed in cars and police boats. Twenty-three persons are employed full-time in operation and maintenance throughout the State. At Hobart, a new communications section has recently been built at a cost of \$40,000. Each mobile unit costs approximately \$240 to place in service; each base station, of which there are seven, \$4,000; and each of the four intrastate systems \$2,500. The cost of the interstate linkage was \$6,000. A teleprinter has recently been installed. This allows for a connection with all States and gives a world-wide coverage through "Interpol". An important feature of the radio service is its use for emergency and search and rescue work. "Walkie-talkie" sets are available and there is a set which can be adapted to every emergency high-frequency system and to the interstate network.

Search and Rescue

The Tasmanian Police Department in recent years has built up an efficient search and rescue organisation. The squad, which operates largely from Hobart, is supported by personnel who are stationed at various points throughout the State. Close liaison is maintained with the Walking Clubs in the State, who have given valuable help in the past. The squad is an efficient mobile unit, ready to leave promptly for any part of the island. All types of equipment are available for under-water search, resuscitation, cliff rescue and searches for lost hikers. Fast boats on trailers are kept at police headquarters. Exercises in rescue work are carried out by the squad from burning buildings. Tear-gas guns are also available for the removal of dangerous persons from a building. The nucleus of the under-water squad is stationed at Hobart and its members take part in a training session every three weeks.

Laboratory

The Department has modern equipment for ballistic examination and for the maintenance of firearms. Early this century, attempts were made in America to identify bullets fired from a particular rifle. Forty years ago this identification became practicable and, in the late 1930's, a comparison microscope was bought by the Department to give the nucleus of a laboratory. This machine has been superseded and is now in the Police Museum. The work carried out by police experts is not confined to firearms but includes examination of tyre and boot marks, the comparison of tool and jemmy marks, the re-etching and raising of filed out serial numbers and the classification and indexing of rifling marks in bullets and firing-pin impressions. The present comparison microscope, which is one of the most modern in the world, is used for the examination of bullets, cartridge cases, file marks, cutting and impact marks, hair and fibres, and comparison of paper and material edges.

Photography and Scientific Equipment

In photography, the police have an up-to-date section which is kept fully occupied and produces some 30,000 photographs a year. Use is made of the various ray lamps which assist in criminal investigation. Colour photography is also used. It can, for example, assist in revealing any additions to a written document and variations in ink colours. An official document examiner has been appointed at Hobart and is aided by many valuable pieces of equipment, such as monocular and binocular microscopes, testing apparatus and photographic recording equipment. As an example of the work done, 7,000 documents had to be closely examined in one suspected fraud case alone.

Fingerprinting

This is one of the most important branches of criminal investigation. Prints were first taken in Tasmania in 1904 by gaol authorities and were kept there, but in 1910 the Police Department took control of this activity, filing prints of all persons convicted of criminal offences. Some 2,000 sets of prints are received and classified each year and over 100,000 sets are kept on file. In 1941 a central Fingerprint Bureau was established in Sydney. It is maintained by contributions from all States but is controlled by the New South Wales Police Department. It acts as a clearing-house for all finger-prints taken in the Commonwealth and all prints received are checked. With modern transport, criminals move from one State to another with ease, and often assume a different name. If a person is charged and fingerprinted in a State new to him, he may use an alias and, unless his prints are on file, he may be convicted as a first offender. With a central bureau, this is overcome. Radio contact can establish within a very short time whether he is known in another State and, if so, reveal his true name and past record.

Criminal Investigation

This Branch was set up as a distinct entity in 1904 with one Sub-Inspector at Hobart, and one Sergeant and one Constable at Launceston. The first detectives were appointed in the Colony in the 1840's and, since that time, have operated distinct from but in close liaison with the uniformed branch. The Criminal Investigation Branch now is controlled by the Detective Superintendent at Hobart. It employs over one hundred detectives with personnel at all main centres. Also under the Superintendent's control is the Communications Branch and the Information Bureau; the Bureau has specialist sections dealing with fingerprinting, missing persons, photography, ballistics and the examination of documents.

Traffic Duties

Police are specially detailed for traffic duty in all main centres. Traffic problems in Tasmania are not new. In 1912, the Commissioner of Police, Colonel Lord, reported that increased traffic was creating a problem and it was time for better legislation and wider municipal by-laws to cope with it, as the *Motor Traffic Act* 1907 was inadequate. In 1913, 634 new car licences and 576 renewal licences were issued in the State plus nearly 800 new and renewal motor cycle licences. (Today, motor vehicles "on register" approach 130,000.) In 1919, due to the increase in traffic, a Sergeant was appointed at Hobart to supervise general traffic control. At this time the Police Department was the licensing authority for private vehicles, and in the cities the licensing of public vehicles was a matter for the councils. In 1920 control of all metropolitan traffic passed to the Department. In 1938, the Transport Department was formed and took over the administration of all traffic matters, leaving the police to enforce the regulations. Traffic now occupies a large portion of police time and highway patrols are maintained.

Training

The standard of training given to recruits is high. In the early years, police were appointed and sent out on the beat immediately, with some semblance of instruction given during their off-duty periods. With the appointment of Police Instructors, recruits are now given an intensive 12-weeks' course of instruction. In 1958, an Education Officer was appointed. The training scheme aims to present a well informed and efficient police officer to the public. Not only is the officer required to be successful in his initial training examination, but he also must pass a retention examination if he wishes to remain in the service. In addition, where until recent years only one examination was required to qualify for all ranks above that of Constable, it is now necessary to qualify by examination before promotion for every rank up to that of Inspector. The Department has also sponsored some members in studies at the University and has adopted a continuous programme of sending selected personnel to Police Officer Training Colleges in Melbourne and Sydney.

Policewomen

The first women police were appointed in 1917 and there are policewomen's offices in all main centres. These officers are available to travel to any part of the State as required.

Other Branches

The Licensing and the Bookmakers and Gaming Police have men fully employed in these duties at the main centres in the State.

Publicity

Following a report submitted to a Select Committee in August, 1962, a Public Relations Officer was appointed and a publicity programme was drawn up. Daily police news broadcasts were commenced through the co-operation of radio stations, 7HT, 7EX, 7SD, 7AD and 7BU and, later 7QT. Feature talks are also given from all stations. Other activities include visits to schools and school visits to Police Headquarters, talks to various organisations, and press and radio liaison. A Police Museum, open to the public by appointment, has been established at Hobart.

Present Strength of Force

The following table shows the number of police and expenditure on the Police Department over a five-year period:

Police Force—Number and Cost

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
Police Officers (a) .. (No.)	550	558	579	629	598
Persons Per Police Officer (a) .. (No.)	625	628	616	574	610
Cost (Total Expenditure of Police Department) .. (\$)	1,915,476	2,027,294	2,156,136	2,251,024	2,526,894
Cost Per Head of Mean Population (\$)	5.57	5.79	6.04	6.22	6.90

(a) At 30th June.

Chapter 10

LABOUR, PRICES AND WAGES

EMPLOYMENT

Historical

Although employment statistics are accepted today as a vital economic indicator, Tasmanian records for the first ninety years give no dissection of the population such that the total number of wage and salary earners can be accurately ascertained. From December, 1841, successive Population Censuses had recorded the "rank, profession or occupation" of the community but had failed to make such elementary distinctions as those between "employer", "employee" and "unemployed".

The first Census to provide the necessary analysis was that of 1891, the categories being closely analogous to those currently employed, as the following comparison will show:

Comparison of Occupational Classifications, 1891 and 1961

Census 1891		Census 1961 Classification
Classification	Persons	
(1) Employer	5,538	(1) Employer
(2) Engaged on own account	9,492	(2) Self-employed
(3) Wage earner	37,996	(3) Employee
(4) Relative assisting	5,943	(4) Helper
(5) Unemployed	1,746	(5) Not at work (a)
(6) Dependants	85,952	(6) Not in work force
State Total	146,667	..

(a) "Not at work" is a wider concept than "unemployed" and includes those on strike, changing jobs, temporarily laid off, &c.

In the above table, the first four categories of the two classifications are similar in concept except that a helper need not be a "relative". The fifth and sixth categories are not a perfect match but refer basically to the same segments of the community. So, from 1891 and from successive Population Censuses, it is possible to ascertain the total number of wage and salary earners ("employees") at widely separate points in time.

The Census of 1891 also correctly identified the work force which was defined as employers, those engaged on their own account, relatives assisting, wage-earners and the unemployed; the total of these five categories was given the title "breadwinners". Considerable confusion exists today due to a tendency to use the term "work force" as though it refers exclusively to wage-earners and often employment statistics appear in the press under the incorrect heading "Work Force". In terms of the 1891 classification, no such confusion can exist, since it is immediately obvious that "breadwinners" are not simply those who work for others but include also employers, the self-employed, and the unemployed.

Work Force and Employment

It is essential to distinguish between "work force" and "employees" since employment statistics in this section relate mainly to wage and salary earners. The following table shows the composition of the work force at all Censuses since 1901:

Elements of Work Force from Census of 1901

Census Year	Employer	Self-Employed	Employee	Helper not Receiving Wage or Salary	"Not at Work" (a)	Total in Work Force	Total Population
1901—Males ..	6,213	9,100	36,063	4,098	1,810	57,284	89,624
Females	462	2,434	10,229	2,071	356	15,552	82,851
Persons	6,675	11,534	46,292	6,169	2,166	72,836	172,475
1911—Males ..	8,477	6,742	40,555	3,916	1,492	61,182	97,591
Females	642	1,249	10,715	411	326	13,343	93,620
Persons	9,119	7,991	51,270	4,327	1,818	74,525	191,211
1921—Males ..	4,445	13,309	42,763	1,875	3,606	65,998	107,743
Females	347	1,593	11,484	67	510	14,001	106,037
Persons	4,792	14,902	54,247	1,942	4,116	79,999	213,780
1933—Males ..	7,277	11,887	38,084	1,752	10,226	69,226	115,097
Females	798	1,423	13,082	116	1,442	16,861	112,502
Persons	8,075	13,310	51,166	1,868	11,668	86,087	227,599
1947—Males ..	6,718	12,522	58,097	997	1,867	80,201	129,244
Females	659	1,198	17,693	86	481	20,117	127,834
Persons	7,377	13,720	75,790	1,083	2,348	100,318	257,078
1954—Males ..	6,886	12,616	72,481	778	1,215	93,976	157,129
Females	788	1,329	21,590	246	279	24,232	151,623
Persons	7,674	13,945	94,071	1,024	1,494	118,208	308,752
1961—Males ..	7,108	11,619	78,863	505	3,194	101,289	177,628
Females	1,113	1,572	25,853	194	896	29,628	172,712
Persons	8,221	13,191	104,716	699	4,090	130,917	350,340

(a) Includes those who stated they were usually engaged in work, but were not actively seeking a job at the time of the Census by reason of sickness, accident, &c., or because they were on strike, changing jobs, temporarily laid off, &c. It also includes persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actively engaged in a job at the time of a Census.

The term "Not at Work" was first used in the Census of 30th June, 1947, so the comparison with pre-1947 data in the above table is approximate only. The associated definitional problems are discussed in a later section dealing with "Unemployment".

Married Women in Work Force

A post-war trend has been the increase of married women in the work force. The next table gives data from the Censuses of 1933 to 1961 inclusive and examines the trend on two bases:

- (i) married women in the work force as a proportion of all females in the work force, and
- (ii) married women in the work force as a proportion of all married women.

Married Women in Work Force, 1933 to 1961

Census, 30th June	Married Women (a)			Females In Work Force	Married Women in Work Force as Proportion of—	
	In Work Force	Not In Work Force	Total		Total Females In Work Force	Total Married Women
	No.	No.	No.	No.	Percent	Percent
1933 (b) ..	1,753	41,090	42,843	16,861	10.40	4.09
1947 (c) ..	2,560	52,896	55,456	20,117	12.73	4.62
1954 (c) ..	7,004	60,822	67,826	24,232	28.90	10.33
1961 (c) ..	11,337	64,816	76,153	29,628	38.26	14.89

(a) No distribution has been made of the numbers of women whose conjugal condition was not stated for Censuses 1933 to 1954.

(b) "Married woman" includes "married but permanently separated".

(c) "Married woman" excludes "married but permanently separated".

The following couplets, "In Work Force" followed by "Not In Work Force", show the conjugal condition of all females at 30th June, 1961: never married, 15,243 and 66,342; married, 11,337 and 64,816; married but permanently separated, 938 and 1,142; widowed, 1,480 and 10,266; divorced, 630 and 518; total, 29,628 and 143,084.

Of the 66,342 females "never married" and "not in work force", 57,447 were under 15 years of age.

Monthly Estimates of Employment

The following table gives some early details of Tasmanian wage and salary earners in employment, the basis of estimation being pay-roll tax returns, Government employment returns and the various administrative investigations:

Wage and Salary Earners in Employment
(Excluding Employees in Rural Industry, Private Domestic Service and
Defence Forces)
(^{'000})

Year and Month	Males	Females	Persons
1933—June (a)	29.0	9.1	38.1
1939—July	37.4	11.6	49.0
1941—July	38.6	15.2	53.8
1943—June	36.9	16.7	53.6
1945—June	39.5	16.7	56.2

(a) From Census of Population, June 1933.

Monthly estimates of total employment are a comparatively new development in Australian statistics. In Year Book No. 32 (1939), the Commonwealth Statistician quotes no monthly figure for total Australian employment although reference is made to figures available for Tasmania, N.S.W. and Queensland. The pre-war Tasmanian monthly employment series was compiled by the Bureau from the State wages tax returns of private employers in respect of their employees and from returns of Commonwealth, State and Local Government employment (a State wages tax had been imposed as from 1934-35 to

help meet the depression emergency). Use was made of a wider concept of employment than is embodied in current series and therefore any comparisons based on these pre-war figures would be misleading.

The likelihood of a war involving Australia, and later the actual outbreak of hostilities, gave rise to Federal administrative investigations into national manpower (the National Register, July 1939; the Civilian Register, June 1943; the Occupational Survey, June 1945). Federal pay-roll tax was imposed as from July, 1941, and just as the pre-war Tasmanian wages tax returns had formed the basis for a State employment series, so this new fiscal requirement was used to produce estimates of employment for all States and for Australia as a whole.

Pay-roll tax returns cover only a small proportion of wage earners on rural holdings and practically no private domestic servants; accordingly, these classes of workers were excluded entirely from the estimates.

Current Series of Employment Statistics

In this chapter, it is intended to show employment details as from June, 1954. The series from this date is based on comprehensive data (referred to as "benchmarks") derived from the Population Censuses of June, 1954 and June, 1961. Figures for periods between and subsequent to the two benchmark points of time are estimates obtained from three main sources, namely: (a) current pay-roll tax returns; (b) current returns from Government bodies; (c) some other direct current records of employment (e.g. for hospitals). Data from these sources have been supplemented by estimates of the change in the number of wage and salary earners not covered by the foregoing collections. (The series for the period prior to 30th June, 1954, used, as a benchmark, the Population Census of 30th June, 1947.)

The benchmark figures are derived from particulars recorded for individuals on population census schedules, whereas the estimated monthly figures are derived mainly from reports supplied by employers, relating to enterprises or establishments. These two sources differ, in some cases, in scope and in reporting of industry; however, the industry dissection of the benchmark total has been adjusted, as nearly as may be, to an enterprise or establishment reporting basis. The industry classification used throughout the series is that of the Population Census of June, 1961.

Pay-roll tax returns are lodged at present by all employers paying more than \$400 a week in wages (other than certain Commonwealth Government bodies, religious and benevolent institutions, public hospitals and other similar organisations specifically exempted under the *Pay-roll Tax Assessment Act 1941-1962*). At 30th June, 1954, this Act required employers paying wages of more than \$160 a week to lodge returns. The exemption limit was raised to \$240 a week from 1st September, 1954, and to the present level of \$400 a week as from 1st September, 1957.

As previously explained, employees in rural industry and in private domestic service are not included in the estimates because of the inadequacy of current data. The terms "Employment", "Number Employed", "Employees" and "Wage Earners" used throughout are synonymous with, and relate to, "Wage and Salary Earners" on pay-rolls or in employment in the latter part of each month, as distinct from numbers of employees actually working on a specific date. They include some persons working part-time.

Figures for current months are subject to revision. As they become available, particulars of employment obtained from other Bureau collections, such as the annual factory census and the censuses and sample surveys of retail

establishments, are used to check and, where necessary, to revise estimates in relevant sections. When the results of the Population Census of 30th June, 1966 become available, it will be possible, with 1961 and 1966 benchmarks, to revise the complete series for the inter-censal period, if this should seem desirable.

The following table gives estimated totals for employees in Tasmania at June and December of each year since June, 1954:

Wage and Salary Earners in Civilian Employment, June and December
(Excluding Employees in Rural Industry, Private Domestic Service and Defence Forces)
(^{'000})

Year	June			December		
	Males	Females	Persons	Males	Females	Persons
1954	64.8	20.2	85.0	66.4	20.2	86.6
1955	66.7	20.9	87.6	67.0	21.6	88.6
1956	67.6	22.4	90.0	68.6	22.1	90.7
1957	68.2	22.2	90.4	69.1	22.3	91.4
1958	69.5	22.9	92.4	70.0	22.7	92.7
1959	70.4	23.2	93.6	71.8	23.7	95.5
1960	72.6	24.5	97.1	74.1	25.1	99.2
1961	73.2	24.9	98.1	73.6	24.8	98.4
1962	73.6	25.5	99.1	75.0	25.4	100.4
1963	74.9	25.5	100.4	76.9	26.7	103.6
1964	77.5	27.0	104.5	78.0	27.6	105.7
1965	78.5	27.8	106.3	80.4	29.2	109.6

Note—Figures rounded to nearest 100 without adjustment to add to totals.

The detailed study of employment trends requires examination of monthly figures, so the next table has been compiled to show totals of employees for each month from January, 1963:

Wage and Salary Earners in Civilian Employment, Monthly Estimates
(Excluding Employees in Rural Industry, Private Domestic Service and Defence Forces)
(^{'000})

Month	Males			Females			Persons		
	1963	1964	1965	1963	1964	1965	1963	1964	1965
January ..	75.4	77.1	78.1	25.4	26.5	27.3	100.8	103.6	105.5
February ..	75.4	77.8	78.7	25.8	26.9	27.7	101.2	104.6	106.5
March ..	75.1	78.0	79.1	25.9	27.4	28.3	101.0	105.4	107.5
April ..	75.3	77.8	79.3	25.9	27.4	28.3	101.2	105.3	107.7
May ..	75.6	77.8	79.3	25.7	27.1	28.3	101.3	104.9	107.6
June ..	74.9	77.5	78.5	25.5	27.0	27.8	100.4	104.5	106.3
July ..	74.9	77.0	78.4	25.3	26.8	27.8	100.2	103.9	106.2
August ..	75.0	76.4	77.9	25.4	26.7	27.9	100.4	103.1	105.8
September ..	75.2	76.7	78.2	25.5	26.7	27.9	100.7	103.5	106.1
October ..	75.1	76.8	78.4	25.8	26.7	28.1	100.9	103.5	106.5
November ..	75.8	77.1	79.3	26.0	26.9	28.4	101.8	104.0	107.7
December ..	76.9	78.0	80.4	26.7	27.6	29.2	103.6	105.7	109.6

Note—Figures rounded to nearest 100 without adjustment to add to totals.

Civilian Employees of Government Bodies

In Tasmania, as in other Australian States, a relatively high proportion of wage and salary earners is employed by government bodies operating at four levels: Commonwealth, State, Local and Semi-Government (with the complication that semi-government authorities may have been created by either the Commonwealth or the State). For the purposes of these statistics, govern-

ment employees include persons working on government services such as railways, tramways, banks, post offices, power and light, air transport, education (including universities), broadcasting, television, police, public works, government factories, departmental hospitals and institutions, &c., as well as those engaged in administrative services.

In comparing the levels of employment in the government and private sectors, account should be taken of the fact that, in Tasmania and other Australian States, there are many business undertakings under government control and ownership. Thus the government employment figures include not just administrative personnel but also bus drivers, air pilots, postmen, train drivers, engineers, construction workers, architects, carpenters, printers and others in a variety of non-clerical occupations. Also, employment figures in the private sector do not include workers in rural industry and private domestic service.

The following table shows the number of government employees at June, 1965 according to the level of government:

Civilian Employees of Government Bodies, June, 1965
(^{'000})

Particulars	Level of Government—			Total
	Commonwealth Government (a)	State Government (a)	Local Government	
Males	4.8	17.5	2.1	24.4
Females	1.3	4.7	0.2	6.2
Persons	6.2	22.2	2.3	30.7

Note—Figures rounded to nearest 100 without adjustment to add to totals.

(a) Includes semi-government bodies.

The next table shows the number of government employees from June, 1954 at annual intervals and also the number of wage and salary earners working for private employers:

Total Civilian Employees of Private Employers and Government Bodies (a)
(^{'000})

June	Males Employed By		Females Employed By		Persons Employed By	
	Private Employers	Govt. Bodies	Private Employers	Govt. Bodies	Private Employers	Govt. Bodies
1954	44.5	20.3	15.9	4.3	60.4	24.6
1955	45.3	21.4	16.4	4.5	61.7	25.9
1956	47.2	20.4	17.6	4.8	64.8	25.2
1957	47.4	20.8	17.3	4.9	64.7	25.7
1958	47.4	22.1	17.8	5.1	65.2	27.2
1959	48.1	22.3	18.0	5.2	66.1	27.5
1960	50.3	22.3	19.1	5.4	69.4	27.7
1961	51.3	21.9	19.4	5.5	70.7	27.4
1962	51.2	22.4	20.0	5.5	71.2	27.9
1963	51.7	23.2	19.6	5.9	71.3	29.1
1964	53.6	23.9	21.0	6.0	74.6	29.9
1965	54.1	24.4	21.5	6.2	75.6	30.7

Note—Figures have been rounded to nearest 100 without adjustment to add to totals.

(a) Excludes from (i) Private Sector: employees in rural industry and private domestic service, and from (ii) Government Sector: State and local government employees engaged in rural industry or in private homes as employees of government emergency housekeeper services; excludes also defence forces.

Industrial Classification of Employees

In the following table, wage and salary earners in civilian employment at 30th June, 1965 are classified according to industry:

Wage and Salary Earners in Civilian Employment: Industry Groups and Sub-Groups, June, 1965

(Excluding Employees in Rural Industry, Private Domestic Service, and Defence Forces)
(’000)

Industry Group and Sub-Group	Males	Females	Persons
Forestry, Fishing and Trapping	1.1	..	1.1
Mining and Quarrying	3.1	0.1	3.2
Manufacturing	24.4	5.7	30.1
Electricity, Gas, Water and Sanitary Services	3.4	0.2	3.7
Building and Construction	10.1	0.2	10.3
Transport and Storage—			
Road Transport and Storage	2.2	0.2	2.4
Shipping and Stevedoring	2.4	0.1	2.4
Rail and Air Transport	1.6	0.1	1.7
Total	6.2	0.4	6.6
Communication	3.0	0.8	3.8
Finance and Property—			
Banking	1.2	0.7	1.9
Other	1.4	1.0	2.4
Total	2.6	1.6	4.2
Commerce—			
Retail Trade	7.1	5.3	12.4
Wholesale and Other Commerce	5.7	0.8	6.5
Total	12.7	6.1	18.8
Public Authority Activities (n.e.i.)	4.3	1.3	5.6
Other Industries—			
Health, Hospitals, &c.	1.2	4.1	5.3
Education	2.4	3.6	6.0
Amusement, Hotels, Personal Service, &c.	1.9	2.6	4.5
Other (a)	2.1	1.1	3.2
Total	7.6	11.3	18.9
Grand Total	78.5	27.8	106.3

Note—Figures have been rounded to the nearest 100 without adjustment to add to totals.

(a) Comprises Law, Order and Public Safety; Religion and Social Welfare; Other Community and Business Services.

The analysis of wage and salary earners by industry groups clearly indicates “manufacturing” as the predominant activity. Unfortunately, employees in rural industry are excluded from the series so it is not possible to compare employment in primary, secondary and tertiary industries on the basis of the data appearing in the table. (“Employment on Rural Holdings” is described in Chapter 6 but the seasonal character of this work makes it difficult to estimate the level of rural employment in any given month.) Attention is drawn to the relatively minor level of employment in “Public Authority Activities (n.e.i.)”; the civilian employees of government bodies shown in a previous table have been classified according to their appropriate industry group (e.g. transport, communication, health, education, &c.) and only those not included in a specified group appear in this item. Attention is also called to the relatively high level of employment in tertiary industry.

The next table specifies the main industrial groups and shows the industrial classification of civilian employees at annual intervals since June, 1958:

Wage and Salary Earners in Civilian Employment: Main Industry Groups from June, 1958
(Excluding Employees in Rural Industry, Private Domestic Service and Defence Forces)
(’000)

June	Mining and Quarrying	Manufacturing (a)	Building and Construction	Transport, Storage and Communication	Retail Trade	Wholesale Trade, &c; Finance, Property	Public Authority (n.e.i.); Community Services, &c. (b)	Amusement, Hotels, Personal Service, &c.
MALES								
1958	3.3	22.0	9.6	9.4	5.6	6.6	7.5	1.7
1959	3.2	22.2	9.8	9.3	5.7	6.7	7.9	1.8
1960	3.3	22.9	9.9	9.5	6.0	7.2	8.2	1.8
1961	3.4	22.5	9.8	9.5	6.3	7.5	8.3	1.9
1962	3.3	23.0	9.6	9.3	6.2	7.7	8.6	1.8
1963	3.2	23.5	9.9	9.1	6.5	7.7	9.2	1.8
1964	3.1	24.1	10.1	9.3	6.8	8.3	9.5	1.9
1965	3.1	24.4	10.1	9.2	7.1	8.3	10.0	1.9
FEMALES								
1958	0.1	5.2	0.1	1.2	4.4	1.8	7.8	2.2
1959	0.1	5.1	0.1	1.2	4.6	1.8	8.0	2.2
1960	0.1	5.4	0.1	1.1	4.8	2.0	8.4	2.4
1961	0.1	5.2	0.1	1.2	5.0	2.1	8.7	2.3
1962	0.1	5.6	0.1	1.1	5.0	2.2	8.9	2.2
1963	0.1	5.2	0.1	1.1	5.0	2.2	9.3	2.2
1964	0.1	5.8	0.2	1.1	5.2	2.3	9.6	2.5
1965	0.1	5.7	0.2	1.2	5.3	2.4	10.0	2.6
PERSONS								
1958	3.4	27.2	9.7	10.6	10.0	8.4	15.3	3.9
1959	3.3	27.3	9.9	10.5	10.3	8.5	15.9	4.0
1960	3.4	28.3	10.0	10.6	10.8	9.2	16.6	4.2
1961	3.5	27.7	9.9	10.7	11.3	9.6	17.0	4.2
1962	3.4	28.6	9.7	10.4	11.2	9.9	17.5	4.0
1963	3.3	28.7	10.1	10.2	11.5	9.9	18.5	4.0
1964	3.2	29.9	10.3	10.4	12.0	10.6	19.1	4.4
1965	3.2	30.1	10.3	10.4	12.4	10.7	20.0	4.5

Note—Figures have been rounded to nearest 100 without adjustment to add to totals.

(a) Includes employees engaged in selling and distribution, &c. as well as those occupied directly in manufacturing activities.

(b) Includes Law and Order, Religion and Social Welfare, Health Services, Education and Other Community and Business Services.

UNEMPLOYMENT

Historical

The total of persons “unemployed” has been recorded by the Bureau of Census and Statistics at the dates of successive Population Censuses. The measurement of unemployment is complicated by definitional problems since

persons normally in the work force, but not having a job at the time of a census, may be in this position for reasons other than those associated with scarcity of employment. The following table records data from the Censuses of 1921 and 1933:

Work Force and Unemployment, Censuses of 1921 and 1933

Particulars	Census, 4th April, 1921			Census, 30th June, 1933		
	Males	Females	Persons	Males	Females	Persons
Work Force (a) ..	65,998	14,001	79,999	69,226	16,861	86,087
"Unemployed" ..	3,606	510	4,116	10,226	1,442	(b) 11,668
"Unemployed" as Percentage of Work Force ..	5.5	3.6	5.1	14.8	8.6	13.6

(a) Comprises employers, self-employed, employees, helpers and unemployed.

(b) Excludes 4,944 persons (4,193 males) employed part-time, including those on sustenance or relief work. Such persons were classified as employees.

Those describing themselves as unemployed were further invited to state the cause. The result from the Census of 1933 is quoted below:

Causes of Unemployment, Census of 30th June, 1933

Cause of Unemployment	Number			Proportion of Total (Per cent)		
	Males	Females	Persons	Males	Females	Persons
Scarcity of Employment	8,883	1,002	9,885	86.9	69.5	84.7
All Other Causes (a)	1,343	440	1,783	13.1	30.5	15.3
Total ..	10,226	1,442	11,668	100.0	100.0	100.0

(a) Includes sickness, accident, industrial dispute, voluntarily idle and cause not stated.

From the 1947 Census onwards, the enquiry was broadened to include all persons (usually engaged in industry, business, trade, profession or service) who were out of a job and "not at work" at the time of the census for whatever reason, including reasons not normally associated with unemployment.

"Not at Work"

In the next table, a summary is made of data from the Censuses of 1947, 1954 and 1961, the principal comparison being the respective levels of the work force and of those classified "not at work".

As previously defined, "Not at Work" includes those who stated that they were usually engaged in work but were not actively seeking a job at the time of the Census by reason of sickness, accident, &c. or because they were on strike, changing jobs or temporarily laid off, &c. It includes also persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the Census. The numbers shown as "Not at Work", therefore, do not represent the number of unemployed available for work and unable to obtain it.

The term "Not at Work" does not apply to those who have a job but happen to be absent from it at Census date due to sickness or leave.

Work Force and Persons "Not at Work"
Censuses of 1947, 1954 and 1961

30th June	Work Force (a)	Persons "Not at Work"	
		Number	Proportion of Work Force (Percent)
1947—Males . . .	80,201	1,867	2.3
Females . . .	20,117	481	2.4
Persons . . .	100,318	2,348	2.3
1954—Males . . .	93,976	1,215	1.3
Females . . .	24,232	279	1.2
Persons . . .	118,208	1,494	1.3
1961—Males . . .	101,289	3,194	3.2
Females . . .	29,628	896	3.0
Persons . . .	130,917	4,090	3.1

(a) Comprises employers, self-employed, employees, helpers and those "not at work".

Other Measures of Unemployment

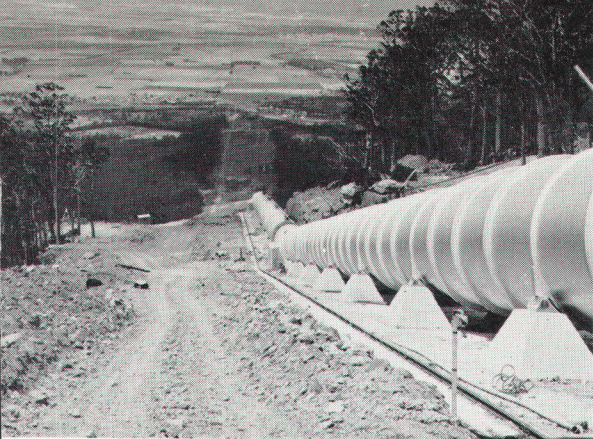
Trade Union Reports: From 1913 onwards, the Commonwealth Statistician collected returns at quarterly intervals from Australian trade unions, the main items of information being the membership of each union and the number of members known by the Secretary to be unemployed. (Some unions kept unemployment registers.) The resulting union unemployment series was regarded of value at the time by virtue of the indication it gave of the relative intensity of unemployment from time to time and was taken as a rough index of the percentage of all workers unemployed at any time. The post-war development of the Commonwealth Employment Service opened up the possibility of obtaining information on a much broader basis.

Registrations With Commonwealth Employment Service

The Commonwealth Employment Service (C.E.S.) was established by Federal legislation under Section 47 of the *Re-establishment and Employment Act* 1945, and under the *Social Services Legislation Declaratory Act* 1947. The principal function of this Service is to provide facilities in relation to employment for the benefit of persons seeking to change or obtain employment, or seeking to engage labour, and to provide facilities to assist in bringing about and maintaining a high and stable level of employment throughout the Commonwealth.

The C.E.S. functions within the Employment Division of the Department of Labour and National Service on a decentralised basis. The Central Office is in Melbourne and there is a Regional Office in Hobart with District Employment Offices in Hobart, Launceston, Devonport and Burnie, and agencies at Smithton and Huonville.

The C.E.S. also has responsibility in the administration of the unemployment benefits provided under the *Social Services Act* 1947-1966. All applicants for benefits must register at a District Employment Office or agency of the C.E.S. which is responsible for certifying whether or not suitable employment



*Pipe-line from Great Lake
(head of water for power
generation—2,730 ft). Part
of Poatina scheme.
(Dept. of Film Production)*

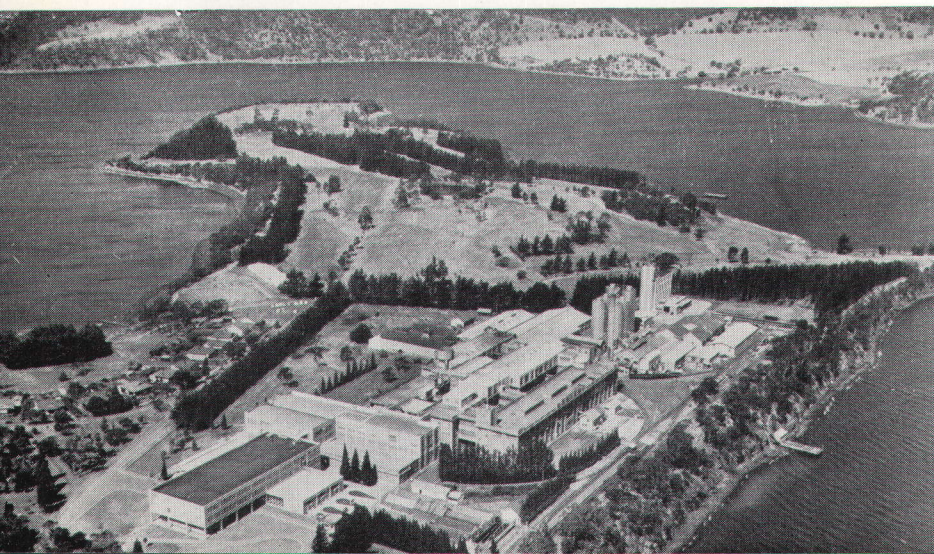
*Rainbow trout landed from Huon River.
(The Mercury)*



*Preparing crayfish for export.
(The Mercury)*



*Chocolate and confectionery plant of Cadbury-Fry-Pascall Ltd. at Claremont on the Derwent.
(Dept. of Industrial Development)*



can be offered them. Claims for unemployment benefits are passed to the Department of Social Services for payment; country residents remote from an office or agency can make their original claim by mail.

The establishment of the Commonwealth Employment Service created two new methods of measuring fluctuations in unemployment; these measures are:

- (1) number of persons registered for employment with the Commonwealth Employment Service at the end of each month; and
- (2) number of persons receiving unemployment benefit from the Department of Social Services at the end of each month.

"Registered for Employment"

In the following table, the persons shown are those who claimed, when registering with the Commonwealth Employment Service, *that they were not employed* and who were recorded on the last Friday in the month as *unplaced*. The count includes those referred to employers and those who may have obtained employment without notifying the C.E.S.; persons receiving unemployment benefit are included.

**Persons Registered for Employment With Commonwealth Employment Service
At June and December of Each Year from 1947 (a)**

Year	On Register, June (a)			On Register, December (a)		
	Males	Females	Persons	Males	Females	Persons
1947 .. ..	..	..	..	155	19	174
1948	172	32	204	132	26	158
1949	227	49	276	156	40	196
1950	158	50	208	144	33	177
1951	117	52	169	127	55	182
1952	514	129	643	554	116	670
1953	680	132	812	389	189	578
1954	438	117	555	304	245	549
1955	402	158	560	244	165	409
1956	359	194	553	494	391	885
1957	1,197	388	1,585	1,134	506	1,640
1958	1,568	663	2,231	1,086	589	1,675
1959	1,373	736	2,109	1,108	726	1,834
1960	1,389	815	2,204	1,581	1,371	2,952
1961	2,328	885	3,213	3,136	2,150	5,286
1962	2,476	1,133	3,609	2,956	2,356	5,312
1963	2,112	1,315	3,427	2,713	2,210	4,923
1964	1,812	1,156	2,968	1,860	1,598	3,458
1965	1,260	975	2,235	1,426	1,350	2,776

(a) Recorded as unplaced on the last Friday in the month.

In interpreting the very low level of registrations in the early period of the table, account should be taken of the fact that registration is a voluntary act and that the facilities of a newly established government employment service may have required some years to become widely known and used. Thus, in the earlier years, an increase in registrations does not necessarily coincide with an actual increase in the number of unemployed and may, in some cases at least, merely indicate a wider acceptance by the public of the facilities offered by the Commonwealth Employment Service.

The table that follows has been compiled to show the number registered for employment at the end of each month. The monthly figures are subject to pronounced seasonal influences, the most obvious being the effect of school-leavers on registration in December and January.

**Persons Registered for Employment With Commonwealth Employment Service
At End of Each Month**

Month (a)—	1963			1964			1965		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
January ..	2,927	2,156	5,083	2,558	2,115	4,673	1,724	1,507	3,231
February ..	2,484	1,886	4,370	1,908	1,573	3,481	1,317	1,260	2,577
March ..	1,515	1,196	2,711	1,286	1,259	2,545	724	970	1,694
April ..	1,618	1,256	2,874	1,334	1,068	2,402	791	919	1,710
May ..	1,833	1,244	3,077	1,484	1,058	2,542	995	986	1,981
June ..	2,112	1,315	3,427	1,812	1,156	2,968	1,260	975	2,235
July ..	2,232	1,547	3,779	2,194	1,249	3,443	1,248	960	2,208
August ..	2,127	1,399	3,526	1,980	1,167	3,147	1,046	886	1,932
September ..	2,191	1,272	3,463	1,819	1,145	2,964	965	859	1,824
October ..	1,822	1,202	3,024	1,541	1,085	2,626	862	875	1,737
November ..	1,617	1,130	2,747	1,280	1,056	2,336	686	789	1,475
December ..	2,713	2,210	4,923	1,860	1,598	3,458	1,426	1,350	2,776

(a) At Friday nearest last day of month.

Persons Receiving Unemployment Benefit

It is possible for a person to register as unemployed but make no claim for unemployment benefit. On the other hand, a person claiming unemployment benefit is required to register for employment. The next table gives details of persons receiving unemployment benefit each month from 1958:

Monthly Number of Persons Receiving Unemployment Benefit (a) From 1958

Month (a)	1958	1959	1960	1961	1962	1963	1964	1965
January ..	434	411	397	291	1,385	1,186	1,191	876
February ..	326	454	371	323	1,225	1,093	1,159	828
March ..	243	398	286	366	913	964	885	542
April ..	296	446	352	689	1,093	1,106	907	538
May ..	459	497	424	998	1,199	1,272	1,171	728
June ..	639	670	500	1,336	1,778	1,777	1,399	926
July ..	712	798	587	1,814	1,937	1,995	1,702	937
August ..	891	932	590	2,023	2,018	1,948	1,732	813
September ..	849	816	596	2,182	1,827	1,939	1,595	763
October ..	789	714	452	1,673	1,588	1,669	1,395	557
November ..	635	600	367	1,575	1,580	1,447	1,115	484
December ..	580	546	319	1,398	1,432	1,173	1,060	465

(a) Number on benefit at last Saturday of month. Source, Department of Social Services.

The number of males and females in receipt of unemployment benefit is shown for June of each year from 1958 onward:

Persons Receiving Unemployment Benefit (a) At June.

Particulars	1958	1959	1960	1961	1962	1963	1964	1965
Males ..	525	502	371	1,060	1,343	1,123	905	517
Females ..	114	168	129	276	435	654	494	409
Persons ..	639	670	500	1,336	1,778	1,777	1,399	926

(a) Number on benefit at last Saturday of June in each year. Source, Department of Social Services.

Comparison of Unemployment Data

The following table shows those classified as "Not at Work" at the Censuses of 1954 and 1961, according to reason together with the corresponding measures of unemployment available from the Commonwealth Employment Service and the Department of Social Services:

Persons "Not at Work" According to Reason, Persons Registered for Employment and Persons Receiving Unemployment Benefit, 1954 and 1961

Particulars	June, 1954			June, 1961		
	Males	Females	Persons	Males	Females	Persons
CENSUS OF 30TH JUNE						
Unable to Secure Employment ..	329	74	403	2,085	507	2,592
Temporarily Laid Off ..	159	26	185	376	81	457
Illness	355	89	444	398	156	554
Accident	58	6	64	106	10	116
Industrial Dispute ..	33	..	33	4	1	5
Other (a)	281	84	365	225	141	366
Total "Not at Work" ..	1,215	279	1,494	3,194	896	4,090
DEPARTMENT OF LABOUR AND NATIONAL SERVICE (b)						
Registered for Employment (b) ..	438	117	555	2,328	885	3,213
DEPARTMENT OF SOCIAL SERVICES (c)						
Receiving Unemployment Benefit (c)	96	13	109	1,060	276	1,336

(a) Mainly persons resting between jobs or changing jobs.

(b) At Friday nearest last day of June.

(c) At last Saturday of June.

The following couplets (male followed by female) analyse "Not at Work" at the Census of 30th June, 1947: unable to secure employment, 434 and 67; temporarily laid off, 427 and 73; illness, 412 and 115; accident, 67 and 5; industrial dispute, 8 and 0; other, 519 and 221; total, 1,867 and 481. The comparison with other sources of data on unemployment is not given since the Commonwealth Employment Service was just commencing to operate.

INDUSTRIAL LEGISLATION AND CONDITIONS

Apprenticeship

Legislation: The *Apprentices Act* 1942 is described as "An Act to encourage, regulate and control the employment and training of apprentices in certain trades", the relevant trades being those to which the Act is proclaimed to apply.

Apprenticeship Commission: The Apprenticeship Commission is a statutory authority constituted under, and responsible for, the administration of the Act; its authority is extended by powers derived from awards of the Commonwealth Conciliation and Arbitration Commission. The Apprenticeship Commission consists of two trades union representatives, two representatives of

employers' organisations and a President, who meet at regular monthly intervals to deal with matters of major importance affecting apprentices. Routine matters are dealt with by the Commission's staff in Hobart.

Duties of Commission: Apprenticeship trades are proclaimed on the recommendation of the Commission which is empowered to: (i) inquire into the conditions obtaining in any trade to determine whether an employer has adequate trade knowledge and facilities for the training of apprentices, and to determine the number of apprentices that may be employed; (ii) to exercise a general supervision over the theoretical and practical training of apprentices to ensure that the terms of apprenticeship contracts are observed. The discharge of these administrative responsibilities has been facilitated by the appointment of supervisors who visit employing establishments and technical colleges to obtain the required information. The supervisors also act as advisers on apprenticeship matters to apprentices and employers, conduct "on the spot" investigations into complaints by either, and refer unresolved problems to the Commission for determination.

Apprenticeships: No apprenticeship may commence without the prior consent of the Commission; having been approved and commenced, no apprenticeship may proceed beyond an initial probationary period of service without indentures (contract of service) having been signed by the contracting parties and the documents registered by the Commission. Once the indentures are registered, the apprenticeship may not be assigned, suspended or terminated without the authority of the Commission. It is required that all differences between the parties arising from the indentures, and any question as to the rights, duties or liabilities of the employer or the apprentice, shall be determined by the Commission.

Annual Reports: Employers are required to report annually concerning the progress of apprentices. Technical Colleges submit similar terminal reports; all unsatisfactory reports are investigated and appropriate measures taken.

Bursaries: To encourage and assist apprentices to become better tradesmen, four bursaries are awarded annually to outstanding apprentices, two of which are of \$300 each and two \$150 each. Additionally a bursary of \$450 contributed in equal proportions by employers' organisations, trades unions and the Commission, is awarded to "The Apprentice of the Year". The bursaries enable the successful apprentice to secure wider trade experience in the service of another employer either in Tasmania or in another State, all necessary arrangements being made by the Commission after the winners have made known their wishes. Time so occupied by bursary winners is accounted part of the apprenticeship term.

Numbers of Apprentices: Approximately 120 trades have been proclaimed as apprenticeship trades in Tasmania. As at 30th June, 1965, 2,952 apprentices were employed, 791 of whom were registered during 1964-65; 548 apprenticeships were completed during the same period. (In addition, 444 youths were listed as probationers at 30th June, 1965.)

Policy: The administrative policy of the Commission is to encourage, regulate and control the employment of apprentices. This three-fold purpose is stimulated by a three-fold objective, namely: (i) to ensure successful trade careers for Tasmanian youths; (ii) to provide well-trained craftsmen for industry; and (iii) to meet the need for national development.

Industrial Accidents

Source of Statistics: Industrial accident statistics in Tasmania are compiled from returns submitted under the *Workers' Compensation Act* by insurance companies, self-insurers and State Government departments. Among workers excluded from coverage are employees of the Commonwealth, police officers and self-employed persons.

Definition: An industrial accident is defined as a work injury causing either death, or absence of the injured person from work for one day or more. For statistical purposes, an accident causing injury to more than one person is counted as more than one accident.

Accidents: In 1963-64, there were 8,167 industrial accidents of which 20 were fatal; 7,644 involved males and 523 involved females. The total time lost from non-fatal accidents amounted to 15,621 weeks of five days (or approximately 319 "worker years").

The most common accident factors in the case of males were: manual handling, 33 per cent; persons falling, slipping, stepping or striking against objects, 25 per cent; falling objects, earth and flying objects, 18 per cent.

Claims and Premiums: In 1963-64, insurers under the *Workers' Compensation Act* paid \$2,248,462 in premiums. Insurance companies paid out \$1,106,690 in claims.

Industrial Safety and Accident Prevention

Responsibility: The Department of Labour and Industry is concerned with industrial safety and accident prevention, and discharges this function with the knowledge that there are approximately 8,000 accidents involving lost time each year among the population covered by the *Workers' Compensation Act*.

Cause of Industrial Accidents: Two major factors are held to underly most industrial accidents, namely (i) unsafe working conditions; (ii) unsafe actions; in some accidents, both factors may be operative.

Prevention: Prevention obviously has a two-fold aspect: (i) inspection programmes aimed at pin-pointing unsafe working conditions; (ii) education and training designed to eliminate unsafe actions.

Training: The problem of training is basically one of educating supervisors and foremen since an attitude of "safety consciousness" has to start with management. Formal training in industrial safety and accident prevention can be had at Hobart and Launceston Technical Colleges in two-year four-subject courses. Informal training is arranged by the Department of Labour and Industry, the courses available being based on the concept of "training within industry". Typical is the "Job Safety Programme" course which can take ten hours or be spread over two days. This course covers the safety responsibilities of the supervisor and provides some techniques to improve his safety performance on the job. He is encouraged to: (i) "spot the danger" in work areas, in work methods, and in individual workers; (ii) "control the danger" by appropriate action; (iii) "prevent recurrence"; (iv) "follow up his previous work". Single lectures on industrial and farm safety are also available and the Department makes arrangements to provide lecturers on request.

Safety Officers: It is expected that large undertakings will have their own specialists concerned with safety matters. However, government safety officers are available to industries which may use their services for a short period. Their function is purely advisory—they are not inspectors—and they assist

organisations which wish to set up safety programmes or to reduce their accident rates; the demand for such service comes from undertakings too small in scale to employ their own expert safety officers.

Research Facilities: The Department carries out a safety research programme, one important field of recent investigation being tractor accidents. A comprehensive classification of safety data is maintained and information, if not available locally, is sought from interstate and international sources.

Workers' Compensation

Legislation: Workers' Compensation legislation in Tasmania was first introduced in 1910 but it was not until 1927 that the Parliament introduced the principle of compulsory insurance against the risk of personal injury being caused to workers in the course of their employment. The machinery for compulsory insurance and compensation is embodied in the *Workers' Compensation Act 1927*, as amended.

Major amendments to the Act were made in 1963, the chief being the adjustment of compensation rates in accordance with variations in the basic wage, and compensation to be paid by a "nominal insurer" in certain cases.

Purpose and Limitations: The principle of the Act is provision for compensation on the death or disablement of a worker, if occasioned by personal injury caused in the course of employment. Self-inflicted injuries are excluded and certain limitations are applied where serious or wilful misconduct is involved.

Monetary benefits have fixed limits. Over and above weekly payments during incapacity and any lump sum entitlement for scheduled injuries, all reasonable costs of medical, hospital, nursing and ambulance services, and in the event of death, the reasonable costs of burial or cremation, are paid up to a maximum of \$2,500.

Non-Contributory Basis: The Act is non-contributory, i.e. the worker does not pay into any fund for the provision of benefits. The employer is obliged to insure with an approved insurance company against the liability to compensation, except in certain cases where he is allowed to carry his own risk.

In any case where an employer has no paid up insurance policy, where the employer cannot be found or where the employer or his insurance company has become insolvent, the worker may claim against a "nominal insurer" as if he were the employer.

Amounts paid by the "nominal insurer" are provided by all insurance companies carrying on Workers' Compensation business in the State. Each company is required to contribute to these types of claim in proportion to the premium income derived from policies effected under the Act during the preceding year.

Compensation on Death: Where death results from an injury, the compensation payable to dependants wholly dependent on the worker's earnings is 284 times the current Hobart basic rate, plus seven times the current Hobart basic rate for each worker's child under 16 years at the date of injury. Partial dependants are entitled to proportionate amounts. ("Current", in this context, means the basic rate at the time of injury.)

"Basic Rate" means an amount 40 cents below the minimum weekly wage payable to an unskilled adult male employed at Hobart under the Federal Metal Trades Award, and it therefore slightly exceeds the basic wage.

Weekly Payments During Incapacity: When the worker is totally incapacitated, the following weekly payments apply: (i) in respect of the worker—70 per cent of the basic rate; (ii) in respect of a dependent wife—17 per cent of the basic rate; (iii) in respect of a dependent child under 16 (or a full-time student under 21)—nine per cent of the basic rate. The application of these formulae, however, is subject to restrictions set out in the next section headed “Maximum Limits of Weekly Payments”.

When a worker is partially incapacitated, he receives the rates appropriate to total incapacity reduced by application of the following factor:

$\frac{\text{Loss of Weekly Earnings}}{\text{Average Weekly Earnings}}$. (“Average weekly earnings”, in this context, refers to his earnings before the date when the injury was sustained).

Maximum Limits of Weekly Payments: The worker’s average weekly earnings before injury are taken into account in fixing maximum weekly compensation payments, the formulae being as follows (with B as basic rate):

- (i) worker’s average weekly earnings not greater than $B \times 1.20$; maximum payment not to exceed 85 per cent of his average weekly earnings;
- (ii) worker’s average weekly earnings between $B \times 1.20$ and $B \times 1.36$; maximum payment not to exceed the basic rate plus two per cent;
- (iii) worker’s average weekly earnings greater than $B \times 1.36$; maximum payment not to exceed 75 per cent of his average weekly earnings.

In cases of the partial or total incapacity of any worker, the total liability of an employer in making weekly compensation payments is limited to 284 times the current Hobart basic rate.

Lump Sum Payments: In addition to weekly incapacity payments, lump sum payments are made in respect of the loss of members of the body or of bodily powers or functions. In the Act, specific injuries are listed and the single amount payable is related to the current Hobart basic rate (specified as B in the following examples): (i) loss of both feet, $B \times 284$; (ii) loss of leg, $B \times 138$; (iii) loss of thumb, $B \times 51$; (iv) loss of great toe, $B \times 35$, &c. Where more than one of these injuries are suffered in the same accident, a maximum payment equal to $B \times 532$ may be paid.

Factory Legislation and Inspection

Legislation: Working conditions in factories in Tasmania are covered under the *Factories, Shops and Offices Act* 1965 as amended which makes provision with respect to the health, welfare, safety, and working conditions of persons employed in factories, shops, and offices and the sanitation of factories, shops, and offices, and matters incidental thereto. Factories are designated in two classes: (a) premises in which four or more persons (including the occupier) are employed; (b) a small factory—in which any number of persons less than four is employed.

Registration Fees: Registration of all factories is required and dates from 1st January each year. Fees for registration range from \$2 for small factories, up to \$40 for factories employing one hundred persons, and \$20 for each additional hundred.

New Factories: When a new factory building is proposed, Section 456 of the *Local Government Act* requires that plans and specifications of the building be submitted to the Department of Labour and Industry before being approved

by the Local Authority. This is to ensure that the factory will comply with regulations in regard to natural lighting, ventilation, fire exits, fire protection, stairs, access ladders, platforms, sanitary conveniences, washing facilities, change and meal rooms and general safety.

Application for Registration: An application for registration of a factory is submitted to the Secretary for Labour with the appropriate fee based on the number of persons to be employed. Upon receipt of this application, an inspection is made of the premises and the occupier is informed of any alterations required to bring the premises into full compliance with the Act. The inspection also entails a study of the process and the working conditions in order that any unsafe conditions or practices may be brought to the notice of management, and the necessary safeguards or improvements made.

Inspection: After premises have been registered, regular routine inspections are made (at least once a year) by officers of the Department, to remedy or prevent unsafe conditions or unsafe practices which could cause bodily injury. At these inspections, particular attention is given to such items as overcrowding, ventilation, natural and artificial lighting, conditions of floors, &c. Access ladders and platforms are checked for compliance with prescribed standards. Contamination of the atmosphere by dust or toxic fumes is studied and means of removal dealt with. Safe handling and storage of dangerous substances; the provision of fire protection, types and placement of portable extinguishers, the provision of fire exits, escapes and exit drills; adequacy of sanitary conveniences, washing, change and meal rooms; the provision of safety equipment such as safety goggles, respirators, welding screens, &c. are all items which require periodic checking.

Accident Reports: Where an accident occurs, the occupier is required, in the case of machinery, to report the accident within 24 hours and in other cases, to report any accident which is likely to incapacitate a worker for not less than seven days. In such cases, an officer of the Department investigates the accident and advises on means of preventing a recurrence.

Construction Sites: Regulations also apply to working conditions on construction works and provide for suitable sanitary, washing and general amenities, in addition to general safety precautions. Where persons are required to work on any construction works at a height of not less than 20 feet or at a depth of not less than five feet, the provision of safety helmets is compulsory.

The Inspection of Machinery

Legislation: The inspection of machinery is carried out under the *Inspection of Machinery Act* 1960 as amended; in this context, inspection applies also to boilers, pressure vessels, lifts and cranes. As with other industrial legislation, the enforcement responsibility lies with the Department of Labour and Industry. The necessary staff consists of a Chief Inspector with specialist inspectors located at Hobart, Launceston and Burnie.

Machinery Inspection: An owner acquiring machinery as defined in the Act is required to notify his nearest district office and have it inspected in order to obtain a certificate as to its safety in use. Inspection may reveal the need for additional guards before permission can be given to operate the machine at all; alternatively the owner may be given a set period in which to make the necessary alterations.

All machinery plants are inspected annually as a matter of routine, and all guards are checked for efficient working and adherence to safety standards. Defects are pointed out to the management and, where necessary, formal

notice may be served. If the inspection is satisfactory or, alternatively, if the defects are remedied, a certificate is issued. In addition to the previous routine inspections, special investigations may arise from accidents, union complaints or modifications to machinery already certified.

Lifts Inspection: Lifts, cranes and hoists, from an inspection point of view, are treated as machinery but there is the additional requirement that design approval must be obtained before construction begins; tests, including beam deflections under load, are made on completion. The standards set are those specified by the Standards Association of Australia.

Boilers Inspection: Before boilers or pressure vessels are installed, the design must be approved by the Chief Inspector and conform with specified Australian or oversea standards. Inspections are made on installation and thereafter annually, unless a special investigation is required arising from plant modification, accidents or from employers' or employees' requests. Only qualified persons may be in charge of pressure plant.

Shop Trading Legislation

Introduction

Hobart is unique among Australian capitals in its observance, in general, of a five-day shopping week (with Saturday and Sunday closing); this practice dates from 1937.

The first Tasmanian *Shops Act* was passed in 1911, its objects being to provide fixed closing hours, to introduce a five and a half day shopping week, and to limit working hours for females and children. A year before, Parliament had introduced other types of control over industrial conditions with the *Factories Act* 1910 and the *Wages Board Act* 1910.

A new *Shops Act* became operative in 1925 and amendments made in 1937 had the effect of introducing a five-day shopping week into the City of Hobart and the Municipality of Glenorchy; in the rest of the State, the five and a half day shopping week continued. With minor modifications, this system operates today.

Factories, Shops and Offices Act 1958

The above Act contains comprehensive provisions relating to the health, welfare, safety and working conditions of shop assistants and office employees. Amendments made in 1965 extended the area of five-day trading to include, not only the cities of Hobart and Glenorchy, but also any parts of the municipalities of Clarence and Kingborough within six miles radius of the G.P.O. at Hobart. (For convenience, the whole area is called the "Hobart Zone" in the rest of this section.) The amendments affecting trading hours became operative from 1st January, 1966 and can be summarised as follows:

Shop Hours, 1966 (a)

Days	"Hobart Zone"		Rest of State	
	Open	Close	Open	Close
Mondays to Thursdays (inclusive)	6 a.m.	6 p.m.	6 a.m.	6 p.m.
Fridays	6 a.m.	9 p.m.	6 a.m.	9 p.m.
Saturdays .. .. .	..	All Day	6 a.m.	Noon
Sundays .. .. .	..	All Day	..	All Day

(a) Permitted trading hours for shops not subject to special provisions.

Longer hours of trading are permitted for "small shops" and shops selling "exempted goods".

Small Shops

A small shop is one in which no more than two persons, including the shopkeeper, work at any time, provided that the shopkeeper is not acting as the agent of another person, and is not employed or engaged in any other business. Small shops, as just defined, may remain open at any time except that they must sell newsvendor goods only within the hours applying to news-vendors and observe certain restrictions on petrol sales. (As from July, 1966, two persons was increased to three.)

Sale of Exempted Goods

Exempted goods are listed under the Act and include a scheduled variety of foodstuffs (excluding butchers' meat), plants, cigarettes, &c. souvenirs, stationery, cut flowers and photographic films. Shops selling nothing but exempted goods are free to trade without restriction.

Special Categories of Trading

In addition to the provisions relating to small shops and the sale of exempted goods, the Act specifies special working hours for certain types of trading:

Chemists: In addition to observing a five day week, chemists may stay open from 7.00 p.m. to 8.30 p.m. on any Saturday, Sunday or holiday, and may be opened at any time for the purpose of supplying only medicine or surgical requirements.

Eating Houses: Places supplying meals and refreshments, and dealing only in exempted goods, may be kept open at any time.

Newsvendors: These are allowed 9 p.m. closing five days a week with provision for morning and evening opening on Saturdays; Sunday opening is permitted subject to certain limitations.

Butchers: Butchers in the "Hobart Zone", the City of Launceston and the towns of Burnie, Devonport, Penguin and Ulverstone are restricted to a five day week with 6.00 p.m. closing; elsewhere normal shop hours (i.e. with Saturday opening) apply.

Petrol Filling Stations: Ordinary permitted hours are 6.30 a.m. to 7.30 p.m. on week days (with an extra two hours on Friday evening) and 12.30 p.m. closing on Saturdays. However, a system operates to give the public an opportunity to buy petrol outside these hours at rostered filling stations.

PRICES

Retail Prices and Price Indexes

General

The description of price indexes that follows is, in the main, an abridgement of the text appearing in the Bureau's Labour Report; this report is a basic document in any serious study of official price indexes.

Collection of Retail Price Information

Retail prices of food and groceries and average rentals of houses for years extending back to the year 1901 were collected by the Commonwealth Statistician. As far back as 1856, the average retail prices of provisions at Hobart were published in the "Statistics of Tasmania".

Retail prices of a more extensive range of commodities (including clothing) and certain services in common demand have been ascertained at frequent and regular intervals by the Commonwealth Statistician since 1923. Comparable information is available for the month of November in each year from 1914 to 1922 for each of the six capital cities.

From retail price data, various retail price indexes have been constructed. In the following section, the tables cover, in respect of Hobart, the period from 1914 to the present, the relevant indexes being the "C" Series Retail Price Index and, for more recent years, the Consumer Price Index. The manner in which the main body of commodity prices used in the retail price indexes is ascertained and certain methods adopted to ensure their accuracy and comparability from period to period, are briefly as follows:

- (i) Representative and reputable retailers are selected for each city covered by the indexes and are required to furnish information as to prices (monthly in respect of food and groceries and quarterly in respect of other items). Prices for each item are obtained where practicable from ten or more retailers in each capital. Supplementary information is also obtained from other retailers.
- (ii) Information is collected under authority of the *Census and Statistics Act* 1905-1949, which makes supply of the data compulsory but ensures that particulars supplied by individual retailers will not be divulged to any other person or government authority. Penalties are provided against failure to supply information, against supplying false information and against failure to answer truthfully any question asked by an authorised officer in respect of the contents of any return.
- (iii) The actual collection of information is carried out by qualified Field Officers of the Commonwealth Bureau of Census and Statistics working under the supervision of the Statistician in each State. These Field Officers have wide powers of investigation, including entry of premises and inspection of goods, records, &c.
- (iv) The Field Officers not only receive and check returns but visit the retail shops concerned, whenever necessary, to obtain requisite information. In respect of some articles, where variation of quality may be considerable, Field Officers are equipped with samples of goods used for price comparisons. In such cases, the Field Officers visit every retail informant at each quarterly collection and personally inspect the goods and prices thereof.
- (v) Before each quarterly collection, Supervising Field Officers review the standards of the whole of the items for which prices are collected, after making extensive enquiries among manufacturers, wholesalers and retailers. These Supervising Field Officers periodically accompany Field Officers at their price collections and check their work.
- (vi) The lists of items and the standards thereof are revised from time to time to keep them in harmony with changing conditions.
- (vii) Returns of rents for unfurnished houses of four and five rooms are made at the middle of each quarter by a representative number (ranging up to 30) of house agents in each city covered by the indexes. In addition, particulars are obtained as to the cost of building new houses, local government rates, prices of materials for repairs and maintenance, and weekly payments for houses let by State housing authorities. These are used, together with rents of privately owned houses, to provide a broadly based housing component in the Consumer Price Index.

Nature of Retail Price Indexes

General: The basic principle of a retail price index is relatively simple. It is to select commodities representative of the field to be covered and to combine their prices at regular intervals in accordance with their relative importance in that field. The aim is to measure the degree of change in prices for the selected field taken as a whole. In practice, the application of this principle over a term of years presents great difficulty by reason of the numerous changes which occur in the type, grade and relative quantities of many of the items commonly used.

In the simplest method of compiling retail price indexes, the price of each item is multiplied by a fixed quantity or "weight", the product being an "expenditure". The sum of these products for all items at any given date represents an "aggregate expenditure". The "aggregate expenditures" for successive periods are converted into an index by representing the aggregate of a selected or "base" period by an appropriate number (e.g. 100 or 1,000), and calculating index numbers to that base by the proportion which the aggregate of each period bears to the aggregate of the base period.

Weighting: Weighting is the process by which the prices of commodities are combined into an index in accordance with their relative importance in the field to be covered; the field, in the case of retail price indexes, is usually that of household expenditure.

Obviously, price changes of major items affect household expenditure more than do price changes (in like ratio) of minor items. A 10 per cent rise in the price of butter, for example, will have a greater effect on household expenditure than a 10 per cent rise in the price of sardines. Items are therefore assigned appropriate "weights" which are used as multipliers in the computation of the index. These may be "quantity weights", obtained from estimates of household consumption, or "expenditure (i.e. value) weights", obtained from estimates of the relative importance of the items in household expenditure.

The problem of arriving at appropriate "weights", and of varying the weighting pattern to accord with changes in the consumption pattern, is discussed in more detail under the section headed "Consumer Price Index".

The List of Items: The list of items must be a selected list because it is impossible in practice to ascertain at regular intervals prices of every item of goods and services entering into household expenditure. The list therefore is not (as is sometimes erroneously supposed) a basic wage regimen, nor is it a full list of component items in a standard of living. It does not imply that any particular goods or any selected grades or quantities of these goods should enter into determination of a basic or living wage. The lists used are simply selected items combined in certain proportions for the purpose of measuring price variations. The items are representative of the fields covered, and the proportions approximate to those in average consumption, so far as can be ascertained.

Essential Features: Apart from clear thinking, common sense and sound arithmetic, the prime essentials in compiling a retail price index are therefore: (a) that prices be accurately ascertained at regular intervals for goods of constant grade and quality; (b) that the list of items be as representative as possible of the field to be covered; (c) that the weights be in approximate proportion to quantities actually used in the selected field.

Effects of Changing Conditions on Indexes: Technological development and changes in fashion render it necessary to substitute new grades, qualities or types of articles for those formerly used as indicators of changes in price. Such substitutions help to keep the indexes representative of current conditions and

are not injurious to the index provided the transitional difficulties can be solved as they arise. No change in principle is involved. The indexes continue to measure, as nearly as may be, price variations, and price variations only. Those differences in prices which are solely due to substitution of a new item for one which has ceased to be available, or in common use, are neutralised by taking the price of the old item as typical of price variation in its class up to the time of substitution, and the price of the new item as typical of such changes in price thereafter.

The problem of maintaining an index adequately representative of current usage has intensified since 1950 because of major changes in the pattern of household expenditure and in modes of living. In consequence, the Consumer Price Index was devised as a series of linked indexes.

Purpose and Use of Retail Price Indexes

General: Retail price indexes are designed to measure the extent of changes in price levels only. While they may be used as indicating proportionate variations in cost of a constant standard of living, they do not measure the absolute cost of any standard of living, nor the absolute cost of changes in the standard of living. Strictly speaking, they only measure the proportionate change in the aggregate cost of specified quantities and qualities of the selected list of items included in the index. In a broad sense, they measure proportionate changes in retail price levels within the field they represent.

Price Indexes for Individual Cities: Retail price indexes measure average variations in prices for specified cities individually. They measure proportionate changes from one time to another and not differences in price levels as between cities nor comparative costs of living in different cities.

Price Indexes and Purchasing Power: Retail price indexes are sometimes used as a measure of change in the "purchasing power of money". Strictly speaking, such a measure relates only to purchasing power over the list of items of the index combined in their specified proportions. It is impossible to compile a single general measure that will show for all purposes, and in all classes of transactions, the change in the value of money from one time to another.

Use of Price Indexes by Industrial Tribunals: Retail price indexes are sometimes used by industrial tribunals and other authorities for the adjustment of wages. It is for these authorities to decide, however, what use (if any) they should make of available indexes or whether the Statistician should be asked to compile a special index or adapt an existing index to suit their purposes. The Statistician expresses no view as to whether industrial tribunals should use retail price indexes in their deliberations.

The function of the Statistician is frequently misunderstood. It is sometimes erroneously supposed that certain basic wages are determined by ascertaining the aggregate cost of the list of items included by the Statistician in a retail price index, or by calculating separate components of the wage from the aggregate cost of the items in separate groups of such an index. The actual position is briefly as follows:

- (i) Tribunals determine a basic wage in the light of relevant evidence, presented by the parties, usually covering a wide range of economic conditions. This may, or may not, include evidence on changes in price levels.
- (ii) In some cases it may be provided by statute or by judgment of the tribunal that the total wage thus determined shall be adjusted for price change in ratio to the overall movement in a specified retail price index (e.g. practice of automatic adjustment of Commonwealth Basic Wage in the period 1921-1953).

Previous Retail Price Indexes

General: Five series of retail price indexes were compiled at various times for Australia by the Commonwealth Statistician prior to 1960. Each of these was continued until changed conditions required the compilation of indexes more directly relevant to current conditions. A brief summary of these indexes follows:

- (i) *The "A" Series Index* (covering food, groceries and house rents) was first compiled in 1912 with the year 1911 as base = 1,000. It was discontinued in June, 1938. From 1913 to May, 1933, this index was used for wage adjustment purposes by the Commonwealth Court of Conciliation and Arbitration. Some other tribunals continued to use it until 1938 in certain localities.
- (ii) *The "B" Series Index* (covering food, groceries and rent of four and five roomed houses) was first compiled in 1925 and continued until the December Quarter, 1953. It was the food and rent constituent of the "C" Series Index and was designed to replace the "A" Series Index for general statistical purposes. The "B" Series Index was not used by industrial tribunals in connexion with the adjustment of wages. Its publication was discontinued as from the December Quarter, 1953.
- (iii) *The "C" Series Index* (covering food and groceries, rent of four and five roomed houses, clothing, household drapery, household utensils, fuel, lighting, fares, smoking and some other miscellaneous items) was first compiled in 1921. It was used by the Commonwealth Court of Conciliation and Arbitration for purposes of quarterly wage adjustments from May, 1934 to August, 1953. Some State tribunals continued to use or consider it in their proceedings until it was discontinued. It was last issued on its original basis for December Quarter, 1960. For certain transitional purposes a "C" Series Index was issued for March, June and September Quarters of 1961 (see Section III of appendix to Labour Report No. 48, 1960).
- (iv) *The "D" Series Index*, derived by combining the "A" and "C" Series Indexes, was used by the Commonwealth Court of Conciliation and Arbitration from May, 1933 to May, 1934, and then discontinued.
- (v) *The Interim Index* (covering food and groceries, rent of four and five roomed houses, clothing, household drapery, household utensils, fuel, lighting, fares, smoking, certain services and some other miscellaneous items) was first compiled in 1954 with the year 1952-53 as base = 100. As its title indicated, it was constructed as a transitional index. Its compilation was discontinued following its replacement by the Consumer Price Index in June Quarter, 1960.

The "Court" Index

In 1937 the Commonwealth Court of Conciliation and Arbitration introduced a "Court" Index for the purpose of making automatic quarterly adjustments to the basic wage within its jurisdiction. A "Court" Index (Second Series) was created by the Court in 1946 and a "Court" Index (Third Series) in November, 1950, to provide for automatic adjustment of the increased amounts of adjustable basic wage then determined by the Court at those dates. By decision of the Court, the "Court" Index ceased to be issued by the Industrial Registrar as at the December Quarter, 1953. These "Court" Indexes were an arithmetical conversion of the "C" Series Retail Price Index.

Retail Price Index Numbers, 1901 to 1964

The index numbers that follow are presented as a continuous series, but they give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ greatly in scope. The successive indexes used are: 1901-1914, the "A" Series; from 1914 to 1946-47, the "C" Series; from 1946-47 to 1948-49, a composite of Consumer Price Index Housing Group (partly estimated) and "C" Series excluding rent; and from 1948-49, the Consumer Price Index. It should be noted that this long-term series is for the six capital cities combined, not for Hobart alone.

Retail Price Index Numbers, 1901 to 1964
Six State Capital Cities Combined
(Base—Year 1911 = 100)

Year	Index Number	Year	Index Number	Year	Index Number	Year	Index Number
1901 ..	88	1917 (a) ..	141	1933 ..	133	1949 ..	240
1902 ..	93	1918 (a) ..	150	1934 ..	136	1950 ..	262
1903 ..	91	1919 (a) ..	170	1935 ..	138	1951 ..	313
1904 ..	86	1920 (a) ..	193	1936 ..	141	1952 ..	367
1905 ..	90	1921 (a) ..	168	1937 ..	145	1953 ..	383
1906 ..	90	1922 (a) ..	162	1938 ..	149	1954 ..	386
1907 ..	90	1923 ..	166	1939 ..	153	1955 ..	394
1908 ..	95	1924 ..	164	1940 ..	159	1956 ..	419
1909 ..	95	1925 ..	165	1941 ..	167	1957 ..	429
1910 ..	97	1926 ..	168	1942 ..	181	1958 ..	435
1911 ..	100	1927 ..	166	1943 ..	188	1959 ..	443
1912 ..	110	1928 ..	167	1944 ..	187	1960 ..	459
1913 ..	110	1929 ..	171	1945 ..	187	1961 ..	471
1914 (a) ..	114	1930 ..	162	1946 ..	190	1962 ..	469
1915 (a) ..	130	1931 ..	145	1947 ..	198	1963 ..	472
1916 (a) ..	132	1932 ..	138	1948 ..	218	1964 ..	483

(a) November.

"C" Series Retail Price Index Numbers for Hobart from 1914

As previously indicated, the Consumer Price Index is the current index produced by the Bureau, the "C" Series Index having been discontinued. The following table shows the "C" Series Retail Price Index Numbers for Hobart from 1914 to 1953; it should be noted that the Consumer Price Index is regarded as being more representative of price variations from 1948-49 onwards; full details of this later index appear in subsequent tables.

"C" Series Retail Price Index Numbers, All Groups, Hobart
(Base—Weighted Average of Six Capital Cities, 1923-1927 = 1,000)

Year	Index	Year	Index	Year	Index
1914 (a) ..	687	1928 ..	980	1942 ..	1,078
1915 (a) ..	776	1929 ..	1,000	1943 ..	1,117
1916 (a) ..	783	1930 ..	956	1944 ..	1,105
1917 (a) ..	879	1931 ..	875	1945 ..	1,107
1918 (a) ..	923	1932 ..	844	1946 ..	1,138
1919 (a) ..	1,042	1933 ..	825	1947 ..	1,178
1920 (a) ..	1,213	1934 ..	837	1948 (b) ..	1,292
1921 (a) ..	1,070	1935 ..	849	1949 (b) ..	1,419
1922 (a) ..	997	1936 ..	860	1950 (b) ..	1,526
1923 ..	1,042	1937 ..	875	1951 (b) ..	1,861
1924 ..	1,051	1938 ..	887	1952 (b) ..	2,180
1925 ..	1,028	1939 ..	908	1953 (b) ..	2,399
1926 ..	1,035	1940 ..	945		
1927 ..	998	1941 ..	1,001		

(a) At November; remaining figures are average for year.

(b) See tables that follow for Consumer Price Index from 1948-49; "C" Series Index number for year 1952-53 (Hobart) was 2,287.

Consumer Price Index

Introduction: The Consumer Price Index was first compiled in 1960, retrospective to the September quarter, 1948. It replaced both the "C" Series Retail Price Index and the Interim Retail Price Index in official statistical publications of the Bureau. The title "Consumer Price Index" is used for purposes of convenience and does not imply that the new index differs in definition or purpose from previous retail price indexes. A longer but more completely descriptive title would be "Consumer Series Retail Price Index Numbers". For practical purposes, the terms "retail prices" and "consumer prices" are synonymous. The Consumer Price Index is designed to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditure of wage earner households in the aggregate.

Investigations revealed that the incidence and frequency of changes in the pattern of household expenditure since 1950 were such as to render it necessary to construct not one, but a *series of new indexes* introducing additional items and changes in weighting patterns at short intervals between 1949 and 1960. For this period, to obtain a continuously representative measure of retail price change, these now necessarily replace the types of indexes with a constant list of items and a constant set of weights which were kept unchanged for extensive periods. The Consumer Price Index therefore consists of a sequence of short-term retail price indexes chain linked at June quarter, 1952, June quarter, 1956, March quarter, 1960, and December quarter, 1963 into one series with reference base year 1952-53 = 100.0.

Origin: The list of component items and the weighting pattern of the "C" Series Retail Price Index, first adopted in 1921, were slightly revised by a Conference of Statisticians in 1936, but otherwise continued almost unchanged until the index was discontinued in 1960.

The period 1939 to 1948 was marked by war-time controls, price control, and rationing; with the cessation of these controls, there was a rapid rise in prices and a new sequence of changes in consumption and in the pattern of wage-earner expenditure. Thus, in the immediate post-war period, it was virtually impossible to establish a system of weighting that would adequately reflect the changing pattern of household expenditure, or be more continuously representative of current conditions, than that employed in the existing "C" Series Index. Accordingly, the "C" Series Index continued to be compiled on its pre-war basis without significant change in procedures.

The Interim Index was a transitional index designed to measure retail price variations on the "C" Series model in terms of post-war consumption weights, as emerging in the late 1950's. It embraced a wider range of commodities and services than did the "C" Series Index, but it did not take into account successive major changes in the pattern of expenditure and modes of living that occurred between 1950 and 1960. These changes could not, in fact, be detected and measured promptly, and incorporated into an index concurrently with their happening. In this period, home owning largely replaced house renting, the use of the motor car greatly increased and partly replaced use of public transport, and various items of electrical household equipment and television came into widespread use. The impact of these (and other) changes in usage upon the pattern of household expenditure was heightened by disparate movements in prices. Together they rendered nugatory the attempt to meet the situation by devising a single Interim Retail Price Index. As studies progressed and new data became available, it was clear that no single list of items and no single set of fixed weights would be adequately representative as a basis for measuring retail price changes at all times throughout the post-war

period. In consequence, the situation was met by compiling the Consumer Price Index, constructed as a chain of linked indexes with significant changes in composition and weighting effected at short intervals (1952, 1956, 1960, 1963).

Purpose, Scope and Composition: The Consumer Price Index is a quarterly measure of variations in retail prices of goods and services representing a high proportion of the expenditure of wage-earner households. The weighting pattern relates to estimated aggregates of wage-earner household expenditures and not to estimated expenditures of an "average" or individual household of specified size, type, or of mode of living. In this way it is possible to give appropriate representation to owner-occupied houses, as well as rented houses, and to include motor cars, television sets and other major expenditures which relate to some households and not to others.

Consumer (retail) price indexes are sometimes loosely called "cost of living indexes" and are thought to measure changes in the "cost of living". Neither the Consumer Price Index, nor any other retail price index, measures changes in the cost of living that result directly from changes in the mode or level of living. Changes of that kind are matters for consideration apart from price indexes. However, the change in prices of goods and services is a very important part of the change in the cost of living and this part is measured by consumer (retail) price indexes.

The Consumer Price Index covers a wide range of commodities and services arranged in the following five major groups: Food; Clothing and Drapery; Housing; Household Supplies and Equipment; Miscellaneous. These groups do not include every item of household spending. It is both impracticable and unnecessary for them to do so. Prices are collected regularly for specified quantities and qualities of a large and representative selection of commodities and services. Movements in the prices of these items, when combined in suitable proportions, provide a representative measure of price change as affecting a high proportion of the expenditure of wage earner households.

Weighting in Cities: A common pattern of consumption for all cities is used as the basis of weighting in most fields of the index. But there are some important exceptions. Local weights for individual cities are used for the following:

- (a) Housing—local weighting of the various modes of occupancy of houses, and the weighting generally in the Housing Group.
- (b) Fuel and Light and Fares—the weight for each item included is as estimated from particulars of consumption, revenue, &c. in the individual cities. For each item, the several price series used, and their combining weights, are representative of local usage.
- (c) Meat—in Brisbane and Hobart, the sub-sections beef, mutton, lamb and pork are combined in local proportions.
- (d) For some minor items in one or more cities.

It follows that the separate city indexes measure price movements within each city individually. They do not compare price levels as between cities.

A comprehensive view of the present composition and weighting of the Consumer Price Index is given in the following table. The weights shown are those comprised in the index for the six State capital cities combined. Broadly, they are in proportion to estimated consumption at or about 1961-62, valued at the relevant prices of December quarter, 1963. They indicate the relative influence given to the various components in measuring the degree of price change in the index from December quarter, 1963 (i.e. from the beginning of the current linked series).

Consumer Price Index

Composition and Weighting Pattern as at December Quarter, 1963 for the Six State Capital Cities Combined

Group, Section, &c.	Percentage Weight	
	Section, &c.	Group
Food—		32.1
Cereal Products—Bread, flour, biscuits, rice and breakfast foods	4.0	
Dairy Produce—Milk, cheese, butter and eggs	7.1	
Potatoes, Onions, Preserved Fruit and Vegetables—Potatoes and onions, canned and dried fruits, and canned and frozen vegetables	1.9	
Soft Drink, Ice Cream and Confectionery	4.0	
Other (except Meat)—Sugar, jam, margarine, tea, coffee, baby foods, and sundry canned and other foods	4.1	
Meat—Butchers' (Beef, mutton, lamb and pork)	9.1	
Processed (Bacon, smallgoods and canned meat)	1.9	
		16.9
Clothing and Drapery—		
Men's Clothing	4.1	
Women's Clothing	6.5	
Boys' Clothing	0.6	
Girls' Clothing	1.0	
Piecegoods, &c.—Wool, cotton and rayon cloth, nursery squares and knitting wool	1.0	
Footwear—Men's, women's and children's	2.7	
Household Drapery—Bedclothes, towels, tablecloths, &c.	1.0	
		12.6
Housing—		
Rent—Privately owned houses	2.8	
Government owned houses	0.8	
Home Ownership—House Price	5.2	
Rates	2.6	
Repairs and Maintenance	1.2	
Household Supplies and Equipment—		14.5
Fuel and Light—Electricity	2.4	
Gas	1.3	
Other (Firewood and Kerosene)	0.9	
Household Appliances—Refrigerator, washing machine, stove, radio set, television set, vacuum cleaner, electric iron, &c.	3.6	
Other Household Articles—		
Furniture and Floor Coverings	2.2	
Kitchen and Other Utensils, Gardening and Small Tools	0.9	
Household Sundries (Household soaps, &c.)	1.0	
Personal Requisites (Toilet soap, cosmetics, &c.)	1.1	
Proprietary Medicines	1.0	
School Requisites	0.1	
Miscellaneous—		23.9
Transport—Fares—Train	1.2	
Tram and bus	1.9	
Private Motoring—Car purchase	3.0	
Car operation	4.4	
Tobacco and Cigarettes	3.9	
Beer	3.8	
Services—Hairdressing (Haircut, wave, &c.)	0.7	
Drycleaning	0.5	
Shoe repairs	0.3	
Postal and telephone services	0.9	
Other—Radio and television operation	1.3	
Cinema admission	0.7	
Newspapers and weekly magazines	1.3	
Total	100.0	100.0

Six Capital City Index: The Six Capital City Consumer Price Index is derived as the weighted average of the indexes for the individual cities, the basis of weighting being their populations as recorded at the latest Census (30th June 1947, 1954, 1961 and so on as data become available).

Comparison of the Five Linked Series: The Consumer Price Index is a chain of "fixed weight aggregative" indexes, with significant changes in composition and weighting effected at the linking dates; the principal changes were:

- (a) June quarter, 1952—introduction of private motoring; changed proportions for modes of house occupancy; change in weights of fuel and fares.
- (b) June quarter, 1956—changed proportions in modes of house occupancy; changed weights for fuel, fares and private motoring.
- (c) March quarter, 1960—introduction of television.
- (d) December quarter, 1963—changed weights for fuel, light, fares and motoring; revised housing weights.

The resultant sets of index weights are broadly typical of the patterns of consumption of:

- 1948-49: for periods up to June quarter, 1952;
 1952-53: for periods from June quarter, 1952 to June quarter, 1956;
 1956-57: for periods from June quarter, 1956 to December quarter, 1963;
 1961-62: for periods from December quarter, 1963.

The next table has been compiled to show the percentage contribution to the total index of each of the major groups, first at the beginning of each series, and then at the quarter in which the linking transition was made. The data are for the six capital cities weighted average, and are not completely identical with those employed in calculating the Hobart index; nevertheless the table illustrates the linking mechanism in broad outline:

Consumer Price Index—Analysis of Weighting in Five Linked Series

Linked Series	Percentage Contribution to Total Index (Weighted Average, Six Capital Cities)					
	Food Group	Clothing and Drapery Group	Housing Group	Household Supplies and Equipment Group	Miscellaneous Group	Total
First—						
June Qtr., 1949 ..	31.3	22.8	11.4	13.1	21.4	100.0
June Qtr., 1952 (a)	35.7	23.0	9.2	12.2	19.9	100.0
Second—						
June Qtr., 1952 (b)	33.6	21.6	9.4	11.7	23.7	100.0
June Qtr., 1956 (a)	34.3	20.0	10.5	10.9	24.3	100.0
Third—						
June Qtr., 1956 (b)	33.7	19.7	10.5	11.6	24.5	100.0
March Qtr., 1960 (a)	33.0	19.5	11.0	11.5	25.0	100.0
Fourth—						
March Qtr., 1960 (b)	32.1	19.0	10.7	13.2	25.0	100.0
Dec. Qtr., 1963 (a)	31.6	18.8	12.0	12.6	25.0	100.0
Fifth—						
Dec. Qtr., 1963 (b)	32.1	16.9	12.6	14.5	23.9	100.0

(a) Change in proportions due to disparate price movements during short period shown.

(b) Change in proportions due to deliberate changes in composition or weighting.

The sets of weights used for the successive periods covered by the index have been derived from analyses of statistics of production and consumption, the general Censuses of 1947, 1954 and 1961, the Censuses of Retail Establishments of 1948-49, 1952-53, 1956-57 and 1961-62 and the continuing Survey of Retail Establishments, from information supplied by manufacturing, commercial and other relevant sources, and from special surveys.

Consumer Price Index, Hobart

The Consumer Price Index for Hobart is compiled to the base 1952-53 = 100, the number 100 being the base value for each of the five major groups (Food, Clothing and Drapery, Housing, &c.) and also for the "All Group" index.

The following table has been compiled to show group index movements for Hobart on a quarterly basis as from 1960-61:

Consumer Price Index Numbers—Group Indexes, Hobart
(Base of Each Index—Year 1952-53 = 100.0 (a))

Quarter	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	All Groups
1960-61—Sept. ..	128.4	111.6	153.7	121.3	125.7	125.8
Dec. ..	131.7	112.3	155.9	120.3	125.9	127.1
March ..	133.9	112.5	158.0	120.8	126.7	128.3
June ..	134.4	113.3	158.9	121.9	126.5	128.9
1961-62—Sept. ..	132.9	113.4	160.8	124.9	127.1	129.1
Dec. ..	129.5	114.0	163.7	124.1	127.0	128.3
March ..	127.2	114.2	164.6	123.9	126.8	127.5
June ..	126.5	114.2	166.1	124.2	126.9	127.5
1962-63—Sept. ..	126.6	114.4	166.3	124.2	126.9	127.6
Dec. ..	128.0	114.4	168.7	123.7	126.9	128.2
March ..	127.2	114.4	169.4	123.6	127.1	128.0
June ..	127.0	114.8	170.3	123.8	127.2	128.2
1963-64—Sept. ..	128.7	115.0	170.7	123.4	127.3	128.8
Dec. ..	127.9	114.9	173.6	123.7	127.9	129.0
March ..	129.1	114.9	175.7	123.8	128.7	129.8
June ..	129.5	115.7	175.9	124.1	128.8	130.1
1964-65—Sept. ..	131.6	116.1	176.4	124.4	131.8	131.7
Dec. ..	134.2	116.4	180.9	124.3	133.5	133.4
March ..	135.0	116.9	182.4	124.3	133.9	134.0
June ..	137.2	117.3	183.5	124.9	134.7	135.2
1965-66—Sept. ..	140.9	117.2	184.5	125.6	136.2	137.0
Dec. ..	142.6	117.5	185.9	125.2	141.6	138.8
March ..	140.0	117.9	186.0	125.4	141.5	138.1
June ..	142.2	118.9	187.0	126.7	141.7	139.3

(a) Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted to avoid the distortions that would occur in rounding off figures to the nearest whole number.

The following table shows the "All Group" index numbers for Hobart quarter by quarter, and also as averages for financial years:

Consumer Price Index Numbers—All Groups, Hobart
(Base of Index—Year 1952-53 = 100.0 (a))

Year	Quarter Ending—				Average for Year
	September	December	March	June	
1948-49	58.8	59.9	61.3	62.8	60.7
1949-50	63.6	64.3	64.5	66.3	64.7
1950-51	68.6	70.5	74.5	79.6	73.3
1951-52	84.1	89.3	92.5	95.5	90.4
1952-53	98.1	98.8	100.8	102.3	100.0
1953-54	105.2	105.5	105.0	104.4	105.0
1954-55	104.2	104.1	105.2	105.9	104.9
1955-56	107.4	109.1	110.5	113.6	110.2
1956-57	116.2	117.2	116.7	117.5	116.9
1957-58	116.7	116.9	117.1	117.3	117.0
1958-59	117.7	118.7	119.1	119.3	118.7
1959-60	119.7	120.1	120.8	122.6	120.8
1960-61	125.8	127.1	128.3	128.9	127.5
1961-62	129.1	128.3	127.5	127.5	128.1
1962-63	127.6	128.2	128.0	128.2	128.0
1963-64	128.8	129.0	129.8	130.1	129.4
1964-65	131.7	133.4	134.0	135.2	133.6
1965-66	137.0	138.8	138.1	139.3	138.3

(a) Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted to avoid the distortions that would occur in rounding off figures to the nearest whole number.

The next table shows, as averages for financial years, the group indexes for Hobart.

Consumer Price Index Numbers—Group Indexes, Hobart
(Base of Each Index—Year 1952-53 = 100.0 (a))

Year	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	All Groups
1948-49	56.0	58.0	70.3	68.1	63.1	60.7
1949-50	59.0	67.8	73.0	70.0	63.5	64.7
1950-51	67.3	78.4	79.8	77.2	72.6	73.3
1951-52	87.1	94.3	88.3	92.3	91.7	90.4
1952-53	100.0	100.0	100.0	100.0	100.0	100.0
1953-54	107.9	101.8	107.1	103.0	103.9	105.0
1954-55	107.1	102.0	110.7	103.7	102.0	104.9
1955-56	113.7	103.3	121.9	108.6	106.8	110.2
1956-57	118.6	106.1	133.3	115.2	118.5	116.9
1957-58	115.1	108.7	137.3	116.0	119.5	117.0
1958-59	116.8	109.8	141.3	116.8	121.2	118.7
1959-60	118.5	110.7	148.5	118.5	123.3	120.8
1960-61	132.1	112.4	156.6	121.1	126.2	127.5
1961-62	129.0	114.0	163.8	124.3	127.0	128.1
1962-63	127.2	114.5	168.7	123.8	127.0	128.0
1963-64	128.8	115.1	174.0	123.8	128.2	129.4
1964-65	134.5	116.7	180.8	124.5	133.5	133.6
1965-66	141.4	117.9	185.9	125.7	140.3	138.3

(a) Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted to avoid the distortions that would occur in rounding off figures to the nearest whole number.

Consumer Price Index—Six State Capitals

The following table shows the separate city indexes and the six capitals weighted average for the years 1963-64 and 1964-65. It should be noted that each city's index measures price movements for that city individually. Comparisons may be drawn between cities as to difference in degree of price movement from period to period but not as to difference in price level.

Consumer Price Index Numbers—Six State Capital Cities

(Base of Each Index—Year 1952-53 = 100 (a))

Capital City	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	All Groups
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INDEX NUMBERS, 1963-64

Sydney	122.6	112.5	160.1	111.3	130.0	124.5
Melbourne	127.2	115.2	164.5	112.6	130.8	127.1
Brisbane	133.1	117.8	145.2	111.7	135.2	129.0
Adelaide	129.1	112.8	158.5	104.4	122.3	123.5
Perth	125.4	112.8	155.9	105.2	128.5	123.8
Hobart	128.8	115.1	174.0	123.8	128.2	129.4
Six Capital City Average (b) ..	126.0	114.0	159.6	111.0	129.9	125.7

INDEX NUMBERS, 1964-65

Sydney	129.6	114.2	166.6	110.7	135.1	128.8
Melbourne	133.9	116.8	169.2	115.2	138.3	132.2
Brisbane	141.5	119.5	149.0	112.7	140.9	133.9
Adelaide	136.6	114.4	164.6	104.9	129.6	128.6
Perth	130.5	114.1	160.0	106.4	134.2	127.6
Hobart	134.5	116.7	180.8	124.5	133.5	133.6
Six Capital City Average (b) ..	133.0	115.6	165.0	111.9	136.1	130.4

PERCENTAGE CHANGE FROM 1963-64 TO 1964-65

Sydney	+ 5.7	+ 1.5	+ 4.1	- 0.5	+ 3.9	+ 3.5
Melbourne	+ 5.3	+ 1.4	+ 2.9	+ 2.3	+ 5.7	+ 4.0
Brisbane	+ 6.3	+ 1.4	+ 2.6	+ 0.9	+ 4.2	+ 3.8
Adelaide	+ 5.8	+ 1.4	+ 3.8	+ 0.5	+ 6.0	+ 4.1
Perth	+ 4.1	+ 1.2	+ 2.6	+ 1.1	+ 4.4	+ 3.1
Hobart	+ 4.4	+ 1.4	+ 3.9	+ 0.6	+ 4.1	+ 3.2
Six Capital City Average (b) ..	+ 5.6	+ 1.4	+ 3.4	+ 0.8	+ 4.8	+ 3.7

(a) The base (year 1952-53 = 100) applies—(i) to all groups; (ii) to all cities; (iii) to the six capital cities weighted average.

(b) Average weighted according to Census population of each city.

Wholesale Price Index

History of Wholesale Price Indexes

The first wholesale price index compiled by the Bureau was the Melbourne Wholesale Price Index, originally computed in 1912, with weights for basic materials and food appropriate to usage in 1910. After reviewing the list of items and weighting of the Melbourne Wholesale Price Index, the 1930 Conference of Statisticians resolved that a new index of wholesale prices of basic materials and foodstuffs should be compiled. This index—the Wholesale Price (Basic Materials and Foodstuffs) Index—extends back to the year 1928 and is compiled monthly.

The Melbourne Wholesale Price Index—now obsolete—was continued up to the year 1961 and is of historic interest since the series was taken back in time to 1861, but still using the weights appropriate to 1910. Details of this index, from 1861 to 1953, were published in the Bureau's Labour Report, No. 49 (1961).

General

The term "Wholesale Price Index" is currently the short title for "Wholesale Price (Basic Materials and Foodstuffs) Index". While retail price indexes have been compiled for individual capitals and towns, the wholesale price index is derived almost exclusively from Melbourne sources; it follows that it is impossible to quote specific wholesale index numbers for Hobart. Nevertheless, the series is of value as indicative of the trend of wholesale prices in Australian markets generally.

Index Numbers

The following table summarises the index numbers for the past ten years and shows details for each commodity group. The data have been compiled as averages for financial years but the series is also maintained on a monthly basis.

Wholesale Price (Basic Materials and Foodstuffs) Index Numbers
(Base of Each Index—Average of Three Years Ended June, 1939 = 100)

Particulars	1955-56	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Basic Materials—							
Metals and Coal ..	404	395	399	392	388	383	391
Oils, Fats and Waxes ..	220	225	222	212	209	207	207
Textiles	456	403	387	400	432	484	427
Chemicals	317	331	331	333	317	286	286
Rubber and Hides ..	328	379	341	302	262	221	242
Building Materials ..	415	431	439	439	439	473	503
Total (a)	345	347	346	340	336	339	345
Foodstuffs and Tobacco	325	348	372	332	342	352	364
Total All Groups (a)	334	348	360	336	340	346	355
All Groups By Origin—							
Principally Imported(b)	292	281	278	270	272	275	277
Principally Home Produced ..	352	375	394	363	368	376	388

(a) Weighted average.

(b) Represents only such imported commodities as are included in the Wholesale Price Index and does not measure changes in the prices of all imports.

Definition: The commodities in the current index are priced in their primary or basic form wherever possible. The prices used have, in the main, been obtained directly from manufacturers and merchants. With a few important exceptions, they are from Melbourne sources. The weighting system adopted is based on estimates of the average annual consumption of the commodities in Australia during the years 1928-29 to 1934-35 inclusive. Work is proceeding on the preparation of new series of wholesale price index numbers but meanwhile the present series continues to be compiled on the existing basis which has been increasingly affected by changes in usage, changes of category as between "imported" and "home-produced" for some commodities, and changes in industrial structure.

WAGES

Basic Wage in Tasmania

General

The concept of a "basic" or "living" wage is common to rates of wages determined by industrial authorities in Australia. Initially the concept was interpreted as the "minimum" or "basic wage" necessary to maintain an average employee and his family in a reasonable state of comfort. However, it is now generally accepted "that the wage should be fixed at the highest amount which the economy can sustain and that the dominant factor is the capacity of the community to carry the resultant wage levels" (Commonwealth Arbitration Report, Vol. 77).

In Tasmania, some workers are members of industrial organisations (trade unions) which have interstate affiliations and which fall within the jurisdiction of the Commonwealth Conciliation and Arbitration Commission; other workers are members of trade unions which are without interstate affiliations and which fall within the jurisdiction of State Wages Boards. Thus, at any point in time, it is possible to have two basic wages operative in Tasmania, one fixed by a Commonwealth authority and the other fixed by a State authority. This, however, is a simplification—in theory, at least, each State Wages Board is at liberty to determine an individual basic wage for the trade covered by its jurisdiction. It follows, again in theory, that there could be seventy different basic wages in operation since there are approximately seventy active Wages Boards. In actual fact, machinery exists to avoid such a situation arising and the operation of this machinery is described in a subsequent section headed "State Wages Boards". The present situation may be summarised as follows: the basic wage fixed by the Commonwealth Conciliation and Arbitration Commission in the Federal Metal Trades Award has eventual application not only to most Tasmanian workers under Federal awards but also to most workers under the jurisdiction of State Wages Boards.

Commonwealth Basic Wage

Under the Commonwealth Conciliation and Arbitration Act 1904-1964, the Commonwealth Conciliation and Arbitration Commission (previously the Commonwealth Court of Conciliation and Arbitration) may, for the purpose of preventing or settling an industrial dispute extending beyond the limits of any State, make an order or award "altering the basic wage (that is to say, that wage or part of the wage, which is just and reasonable for an adult male [female] without regard to any circumstances pertaining to the work upon which, or the industry in which he [she] is employed) or the principles upon which it is computed". From this quotation, it may be deduced that margins and other "secondary" components over and above the basic wage are fixed by consideration of "circumstances pertaining to the work upon which, or the industry in which the worker is employed".

Summary of Commonwealth Judgments

- 1907** Mr. Justice Higgins, President of the Commonwealth Court of Conciliation and Arbitration, defined the standard of a "fair and reasonable" minimum wage for unskilled workers as that standard appropriate to "the normal needs of the average employee, regarded as a human being living in a civilised community". The rate declared was 7s. (70 cents) a day or 42s. (\$4.20) for Melbourne, the amount considered reasonable for "a family of about five". This was known as the "Harvester" standard since it arose from a tariff application involving the Sunshine Harvester Works.
- 1913** The Court, in its awards, took cognizance of retail price index numbers, covering food and groceries and house rents ("A" Series) of the 30 more important towns in Australia, first published by the Commonwealth Statistician in 1912. Court practice was to equate the retail price index number of 875 for Melbourne for the year 1907 to the "Harvester" rate of 42s. (\$4.20) per week; by simple proportion, a basic rate of 48s. (\$4.80) per week was then equated with the base of the index (1,000). Similar principles were followed to vary basic wage rates for individual towns in accordance with their respective retail price index numbers. Adjustments were made irregularly in relation to retail price indexes for the previous calendar year or the year ended with the preceding quarter.
- 1921** A system was introduced of making automatic quarterly adjustments to the basic wage in direct ratio to variations in the retail price index ("A" Series). The new system, at that point in time, would have had the effect of yielding a lower base rate than that calculated by the traditional system; accordingly in 1922 the Court added a 3s. (30 cents) loading (known as the "Powers 3s."). The system of automatic quarterly adjustment persisted until September, 1953 while the "Powers 3s." was a basic wage component until 1934.
- 1931** The economic depression resulted in a Court decision to reduce all wages under its jurisdiction by 10 per cent.
- 1933** The Court transferred the basis of quarterly adjustments from the "A" Series to the "D" Series Retail Price Index.
- 1934** The Court adopted the "C" Series Retail Price Index as the indicator for quarterly adjustments, equating the index base (1,000) with 81s. (\$8.10) per week. Basic wages, computed on this relativity, were virtually those which would have been derived under the previous "A" Series without the "Powers 3s." added in, and without the 10 per cent depression reduction.
- 1937** (i) "Prosperity loadings" from 4s. (40 cents) to 6s. (60 cents) according to capital city were added as non-adjustable increments, the adjustable part of the basic wage being termed the "needs" portion. (ii) The minimum permissible adjustment of the basic wage was reduced from 2s. (20 cents) to 1s. (10 cents). (iii) The Court evolved a special "Court" Series based on the "C" Series for adjusting the "needs" portion of the basic wage.
- 1941** The Commonwealth *Child Endowment Act* 1941 came into operation; the basic wage, designed to maintain a family, was in effect supplemented for those with families by independent government action.
- 1946** "Needs" portion of basic wage was increased in December by 7s. (70 cents) per week, and a new "Court" Index ("Second Series") was adopted for purposes of quarterly adjustment. All "loadings" were retained. The 7s. (70 cents) increase was additional to normal quarterly adjustments made during the year.

- 1950 In October, the Court added £1 (\$2) to the basic wage and standardised the varying prosperity loadings at 5s. (50 cents). The judgment further provided that the total basic wage should become subject to automatic quarterly adjustment as from the first quarter in 1951. The £1 (\$2) increase was additional to normal quarterly adjustments made during the year. The new rate, including the 25s. (\$2.50), was equated with the "C" Series retail price index number 1,572 for the six capital cities (weighted average) for the September quarter, 1950. From this equation was derived a new "Court" index (Third Series) with 103.0 equated to 1,000 in the "C" Series Index. (The new six capital cities rate at the time of re-framing the equation was £8-2s. (\$16.20) weekly.)
- 1953 In September, the Court ruled automatic quarterly adjustments of the basic wage should cease.
- 1956 In May, the Court rejected the principle of automatic quarterly adjustments but increased the male basic wage by 10s. (\$1).
- 1957 In April, the Commission again rejected the principle of automatic quarterly adjustment and again increased the male basic wage 10s. (\$1). It expressed support for the principle of annual reviews of the basic wage.
- 1958 In May, an increase of 5s. (50 cents) was made but automatic quarterly adjustments were again refused.
- 1959 In June, the Commission, by majority decision, decided on an increase of 15s. (\$1.50); also, by majority decision, it rejected the principle of automatic quarterly adjustments.
- 1960 In April, the Commission decided to grant no increase.
- 1961 In July, the Commission increased the basic wage by 12s. (\$1.20), rejecting both employers' claims for a 42 hour week and unions' claims for automatic quarterly adjustment. It also ruled that, in February, 1962, "the only issue in regard to the basic wage should be why the money wages fixed as a result of our decision should not be adjusted in accordance with any change in the Consumer Price Index".
- 1962 At the February hearing (as prescribed in the 1961 judgment), the Commission considered the movement in the Consumer Price Index. The index being virtually stationary in the year under review, the Commission granted no increase.
- 1963 In February, the Commission again rejected claims for an increase.
- 1964 In June, the Commission was divided on the amount of the appropriate increase and the award of £1 (\$2) was made on the casting vote of the President. It rejected the application of employers for deletion from the Commission's awards, generally, of the basic wage provisions and for the insertion in those awards of a wage expressed as a total wage.
- 1965 Hearing of the National Wages Case commenced on 2nd March, 1965, before Kirby C J., Gallagher, Moore, Sweeney and Nimmo, J J. Claims by the employers and the trade unions were heard concurrently. The employers' claim (Part A) was for the abolition of the concepts of the basic wage and margins, and the introduction into the Metal Trades Award of an obligation to pay a total wage made up of the sum of the amounts expressed in terms of the basic wage and a margin, plus an amount equivalent to one per cent of such sum. The employers also asked (Part B) that, in respect of the ensuing twelve

months, the level of the basic wage and the level of margins, in so far as the latter is determined upon general economic grounds, should be decided simultaneously. It was open to the Commission under Part B of these claims to decide whether there should be an increase in (a) the basic wage element alone; (b) the marginal element alone; or (c) both the basic wage and marginal elements, to whatever extent, in respect of each element, the Commission deemed proper.

The trade unions sought new basic wage rates incorporating increases proportionate to the rises in the Consumer Price Index. For the Six Capitals Cities basic wage, the increase claimed was 12s. (\$1.20) weekly for adult males.

By majority judgment (Gallagher, Sweeney and Nimmo, *JJ.*) on 29th June, the Commission ruled: (a) Part A of the employers' application was refused. (b) With regard to Part (B) of the employers' application—

- (i) there would be no alteration to the basic wage,
- (ii) with effect from the first pay period commencing on or after 1st July, each margin in Clause 4 of the Metal Trades Award was to be increased by an amount equal to $1\frac{1}{2}$ per cent of the sum of the Six Capital Cities basic wage and that margin.

The majority judgment anticipated that, subject to the question of a particular industry and the question of any margins which had already been increased on general economic grounds since 1963, the increases awarded would be speedily reflected throughout the awards of the Commission.

To summarise, there was no increase in the Commonwealth basic wage in 1965 but margins were varied by the " $1\frac{1}{2}$ per cent formula", i.e. the total of current basic wage and margin was increased by $1\frac{1}{2}$ per cent and the resulting increment was awarded as a variation in the margin.

1966 The Commission increased the basic wage by \$2 with effect from 11th July, 1966, but gave notice of intention to accept a total wage concept at a future hearing.

Basic Wage Rates from 1923

The following table shows the basic weekly wage rates prescribed for adult males under periodical decisions of the Commonwealth Court of Conciliation and Arbitration (and later of the Commonwealth Conciliation and Arbitration Commission).

The rates of wages shown include the "Powers 3s." (30 cents) or its equivalent, and "Prosperity" loadings, where applicable, and the 10 per cent reduction operative from February, 1931 to May, 1934. They also include automatic variations in accordance with quarterly changes in retail price index numbers to August, 1953. Since then, the rates have been declared as the result of an enquiry. The amount *legally* payable in any specific instance must be determined by reference to the appropriate award.

The rates generally are operative from the first pay-period commencing in the month shown or commencing on or after the date shown, and are those applicable to Hobart.

**Commonwealth Basic Wage Rate From 1923—Hobart
Adult Males (\$)**

Date Operative	Weekly Rate	Date Operative	Weekly Rate	Date Operative	Weekly Rate
1923—Feb. ..	8.15	1933—Feb. ..	6.34	1947—Feb. ..	10.40
May ..	8.30	May ..	6.48	Aug. ..	10.50
Aug. ..	8.75	Aug. ..	6.38	Nov. ..	10.70
Nov. ..	8.90	Nov. ..	6.39	1948—Feb. ..	11.00
1924—Feb. ..	8.95	1934—Feb. ..	6.48	May ..	11.20
Aug. ..	8.85	May ..	(a) 6.70	Aug. ..	11.50
Nov. ..	8.80	1935—March ..	6.90	Nov. ..	11.80
1925—Feb. ..	8.70	1937—July ..	(a) 7.20	1949—Feb. ..	12.10
Nov. ..	8.55	Sept. ..	7.30	May ..	12.40
1926—Feb. ..	8.60	Oct. ..	(a) 7.50	Aug. ..	12.70
May ..	8.90	1938—March ..	7.60	Nov. ..	12.80
Nov. ..	8.85	1939—June ..	7.70	1950—Feb. ..	13.10
1927—Feb. ..	8.70	1940—Feb. ..	7.80	Aug. ..	13.50
May ..	8.65	Aug. ..	8.00	Nov. ..	13.90
Aug. ..	8.55	Nov. ..	8.10	Dec. ..	(a) 16.00
Nov. ..	8.50	1941—Feb. ..	8.30	1951—Feb. ..	16.50
1928—Feb. ..	8.40	May ..	8.40	May ..	17.30
May ..	8.25	Aug. ..	8.50	Aug. ..	18.70
Aug. ..	8.30	1942—Feb. ..	8.70	Nov. ..	19.90
Nov. ..	8.25	May ..	8.80	1952—Feb. ..	20.80
1929—Feb. ..	8.30	Aug. ..	9.10	May ..	21.40
May ..	8.60	Nov. ..	9.20	Aug. ..	22.20
Aug. ..	8.55	1943—Feb. ..	9.40	Nov. ..	23.00
Nov. ..	8.60	Aug. ..	9.50	1953—Feb. ..	23.20
1930—Feb. ..	8.65	1944—Feb. ..	9.40	May ..	23.90
May ..	8.40	Aug. ..	9.30	Aug. ..	(a) 24.20
Nov. ..	8.20	Nov. ..	9.40	1956—June ..	(a) 25.20
1931—Feb. ..	(a) 7.02	1945—May ..	9.30	1957—15th May	(a) 26.20
May ..	6.88	Nov. ..	9.40	1958—21st May	(a) 26.70
Aug. ..	6.71	1946—Feb. ..	9.50	1959—11th June	(a) 28.20
Nov. ..	6.43	Aug. ..	9.60	1961—7th July	(a) 29.40
1932—Feb. ..	6.48	Nov. ..	9.70	1964—19th June	(a) 31.40
May ..	6.52	Dec. ..	(a) 10.30	1966—11th July	(a) 33.40
Aug. ..	6.57				
Nov. ..	6.43				

(a) Rate declared subsequent to an enquiry.

The next table has been compiled to show the Commonwealth basic wage rates operating in Australian capital cities:

**Commonwealth Basic Wage—Weekly Rates, Adult Males
(\$)**

Date Operative (a)	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Six Capital Cities
August, 1953 (b)	24.30	23.50	21.80	23.10	23.60	24.20	23.60
June, 1956 ..	25.30	24.50	22.80	24.10	24.60	25.20	24.60
15th May, 1957 ..	26.30	25.50	23.80	25.10	25.60	26.20	25.60
21st May, 1958 ..	26.80	26.00	24.30	25.60	26.10	26.70	26.10
11th June, 1959 ..	28.30	27.50	25.80	27.10	27.60	28.20	27.60
7th July, 1961 ..	29.50	28.70	27.00	28.30	28.80	29.40	28.80
19th June, 1964 ..	31.50	30.70	29.00	30.30	30.80	31.40	30.80
11th July, 1966 ..	33.50	32.70	31.00	32.30	32.80	33.40	32.80

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

(b) Automatic adjustments discontinued.

Commonwealth Basic Wage Rates for Females

The following table summarises the Commonwealth basic wage applicable to females from 1939. Prior to 1950, female basic wage rates had been approximately 54 to 56 per cent of male rates but the Court of Conciliation and Arbitration in its judgment in December of that year fixed the relativity at 75 per cent, and this relationship is still preserved in the latest determinations.

Commonwealth Basic Wage Rate, Hobart—Adult Females
(£)

Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate	Date Operative (a)	Weekly Rate
Sept., 1939 ..	4.20	May, 1952 ..	16.05	15th May, 1957	19.65
Nov., 1947 ..	5.80	Aug., 1952 ..	16.65	21st May, 1958	20.00
Nov., 1948 ..	6.35	Nov., 1952 ..	17.25	11th June, 1959	21.15
Nov., 1949 ..	6.90	Feb., 1953 ..	17.40	7th July, 1961	22.05
Nov., 1950 ..	7.50	May, 1953 ..	17.90	19th June, 1964	23.55
Dec., 1950 (b) ..	12.00	Aug., 1953 ..	18.15	11th July, 1966	25.05
Nov., 1951 ..	14.90	June, 1956 ..	18.90	..	..

(a) Rates operative from the beginning of the first pay-period commencing in the month shown or commencing on or after the date shown.

(b) Female rate increased to 75 per cent of male rate.

State Basic Wage

It is something of a contradiction to speak of a Tasmanian State basic wage, since no provision exists in industrial legislation for the declaration of a State rate. Prior to February, 1956, most Wages Boards adopted Commonwealth basic wage rates. However, from February, 1956 to May, 1958 there was a divergence between Commonwealth and State rates as shown in the following table:

Basic Wage, Hobart—Adult Males and Females (Weekly Rates)
Divergence Between Commonwealth and State Awards (1956-1958)
(£)

Month of Operation (a)	Commonwealth Awards		State Wages Boards' Awards	
	Males	Females	Males	Females
August, 1953	24.20	18.15	24.20	18.15
February, 1956	24.20	18.15	25.90	19.42
May, 1956	24.20	18.15	26.80	20.10
June, 1956	25.20	18.90	26.80	20.10
August, 1956	25.20	18.90	27.20	20.40
May, 1957	26.20	19.65	27.20	20.40
May, 1958	26.70	20.00	27.20	20.40
June, 1959	28.20	21.15	28.20	21.15

(a) Operative as from the beginning of the first pay period in the month shown.

In February, May and August, 1956, most State Wages Boards reverted to the system of automatic quarterly adjustments abandoned by the Commonwealth Court in September, 1953. In June, 1959, most Wages Boards brought their basic wage into line with that awarded by the Commonwealth Commission and have followed its judgments since that date. More detailed reasons for the divergence between Commonwealth and State basic wage rates in this period will be found in the section headed "State Wages Boards".

The next table shows State basic wages in the various States, operative in September, 1965:

State Basic Wages—Weekly Rates
(£)

State or Locality	Date of Operation (a)	September, 1965	
		Males	Females
New South Wales	19th June, 1964	31.50	23.60
Victoria	June, 1964	30.70	23.00
Queensland (Brisbane) ..	20th Sept., 1965	31.40	23.55
South Australia (Adelaide) ..	22nd June, 1964	30.30	22.70
Western Australia	26th July, 1965	31.78	23.84
Tasmania (Hobart)	June, 1964	31.40	23.55

(a) Rates are operative from the beginning of the first pay-period commencing after the date shown, or during the month shown.

Four States (N.S.W., Victoria, S.A., and Tasmania) have adopted Commonwealth rates while two (Queensland and W.A.) are fixing different rates.

Wage Margins in Tasmania

General

Wage margins have been defined as "minimum amounts awarded above the basic wage to particular classifications of employees for the features attaching to their work which justify payments above the basic wage, whether these features are the skill or experience required for the performance of that work, its particularly laborious nature, or the disabilities attached to its performance" (Commonwealth Arbitration Report, Vol. 80).

Marginal rates of wages are determined both by Commonwealth and State industrial tribunals (in Tasmania, by State Wages Boards). In the Commonwealth jurisdiction, prior to 1954, the Commonwealth Court of Conciliation and Arbitration had not made any general determination in respect of wage margins, but general principles of marginal rate fixation had been enunciated by the Court in the Engineers' Case of 1924, the Merchant Service Guild Case of 1942 and the Printing Trades Case of 1947. Major determinations affecting margins were made in the Commonwealth jurisdiction in 1954, 1959, 1963 and 1965 (the 1965 hearing resulted in a determination affecting margins generally even though conceived originally by the claimant trade unions as concerned purely with basic wage issues). The decisions of the Commonwealth Court (and later of the Commonwealth Conciliation and Arbitration Commission) have generally been followed by State industrial tribunals in the determination of margins in State awards. The Tasmanian State Wages Boards have undoubtedly been influenced in their margins determinations by those made in the Commonwealth jurisdiction, although an independent policy has sometimes been pursued (e.g. special 15 per cent marginal increases for certain tradesmen in the State sphere in 1963, as opposed to 10 per cent increases granted in the Commonwealth jurisdiction). The extent of this influence is discussed more fully in the subsequent section "Interdependence of Wage-Fixing Authorities" under the general heading "State Wages Boards".

Summary of Major Judgments (Commonwealth)

- 1954** In November, the Commonwealth Court made an order re-assessing the margin structure in the Metal Trades Award by, in general, raising the current amount of the margin to $2\frac{1}{2}$ times the amount of the margin that had been current in 1937. However, in cases in which the result of the calculation produced an amount less than the existing margin, the existing margin was to remain unaltered. In effect, this decision increased the margin of a fitter from 52s. (\$5.20) weekly to 75s. (\$7.50), increased similarly margins of other skilled occupations, and made no increase in margins of what may generally be described as the unskilled or only slightly skilled occupations under the Metal Trades Award.

At the end of its judgment, the Court stated that while its decision in this case related immediately to one particular industry, it was expected to afford general guidance to all authorities operating under the *Conciliation and Arbitration Act*, or under legislation which provided for tribunals having power to make references, or being subject to appeal, to the Court, where the wage or salary might properly be regarded as containing a margin. The Court added observations for the guidance of these and other tribunals "which may regard decisions of this Court as of persuasive authority".

The " $2\frac{1}{2}$ times Metal Trades formula" was generally adopted in Commonwealth awards and also became a basis for calculating marginal adjustments for trades within the jurisdiction of State Wages Boards in Tasmania.

- 1959** In November, the Commission made an order re-assessing the marginal structure in the Metal Trades Award, Part I, by increasing the existing margins by 28 per cent, the amount of the increase being taken to the nearest 6d. (5 cents). The effect of this decision was to increase the margin of the fitter from 75s. (\$7.50) to 96s. (\$9.60) per week.

The Commission emphasised that the decision related only to the Metal Trades Award but acknowledged that on occasions in the past, margins fixed in the Metal Trades Award, and in particular the margin of the fitter, had been used as standards for other awards. The use of the 28 per cent formula as a guide in other disputes would be a matter for the parties as far as conciliation was concerned and, if arbitration was necessary, for the Commission itself.

In December, the Commission delivered a judgment granting a 20 per cent interim increase to graduates and diplomates in engineering and science (in variation of the Metal Trades Award, Part II and the Aircraft Industry Award, Part II). In the same month, judgment in the Bank Officials' case resulted in an interim increase of 20 per cent in margins for bank officers either with specified length of service (10th to 18th year) or holding specified positions (accountants and managers).

The 28 per cent formula, despite the fact that it had not been designed for general application, was in fact subsequently embodied in most Commonwealth tradesmen's awards and also had wide application in determinations of State Wages Boards in Tasmania.

1963 In April, the Commission made an order increasing margins for adult males in the Metal Trades Award by ten per cent, operative from the first pay-period commencing on and after 22nd April. The Commission emphasised that the decision would relate to the Metal Trades Award only, although it was realised that the margin of the fitter had been used as a standard for other awards. In the present case, the Commission stated it was not intended that the decision should be applied automatically outside the metal trades. The use of any changes in margins granted by the Commission, as a guide in other disputes, would be a matter for the parties as far as conciliation was concerned and, if arbitration was necessary, for the Commission.

In making the determination, the Commission took into account price increases since the judgment of 1959, and also increases in productivity. In Tasmania, the 10 per cent formula had fairly general application in most Federal awards; however, for workers under the jurisdiction of State Wages Boards, the Commonwealth formula was varied, the more highly skilled receiving a 15 per cent increase in margins, the less highly skilled a 10 per cent increase.

1965 The judgment of the Commission delivered on 29th June is given in some detail in the preceding section headed "Basic Wage in Tasmania — Summary of Commonwealth Judgments".

The order of the Commission had the effect of varying margins by the " $1\frac{1}{2}$ per cent total wage" formula, i.e. the total of the current basic wage and margin was increased by $1\frac{1}{2}$ per cent and the resulting increment was awarded as a variation in the margin.

The 1965 judgment introduced a new principle into margins fixation. The judgments of 1954, 1959 and 1963 had led to the variation of a great number of margins under various Federal awards on a "flat-rate" formula basis, i.e. a uniform percentage increase was applied to individual current margins; the effect of "flat-rate" percentage marginal adjustments was that individual total wage rates increased in accordance with the principle that the greater the margin, the greater the proportionate increase in the total wage rate. The 1965 judgment, depending as it did on a total wage formula, had the effect of increasing individual total wage rates by a uniform percentage; a necessary result of such a formula is that marginal increases exhibit "tapering", i.e. the percentage increase in the margin becomes proportionately smaller for the more highly paid.

One other aspect of the 1965 judgment invites comment. Each variation in the basic wage, and each general variation in margins resulting from previous judgments, had had the effect of altering relativities in individual total wage rates as between the various trades and occupations. The 1965 judgment, by using a total wage formula, preserved existing percentage relativities as between individual total wage rates.

1966 In announcing the basic wage increase of \$2 to operate from 11th July, 1966, the Commission gave no final decision in the matter of margins, but gave notice of an intention to adopt the total wage concept at a hearing to be held later.

*Clark Dam which creates Lake King William and feeds water to the Derwent System Power Stations.
(Hydro-Electric Commission)*





*Launceston viewed from Royal Park.
(Dept. of Film Production)*



*Sheep being hand-fed silage.
(Dept. of Agriculture)*

Minimum Weekly Wage Rates in Tasmania

Definitions

In this section, "minimum weekly wage rates" is used as a short title for "*weighted average* minimum weekly wage rates". The rates are those applicable to adult males and adult females.

The minimum wage is the lowest rate payable for a particular occupation, and for most occupations it comprises the basic wage and "secondary" wage payments, i.e. additional amounts such as margins for skill, &c. and loadings of various kinds. In the majority of cases such rates are prescribed in awards or determinations of Commonwealth or State industrial authorities or in agreements registered with them. Some rates are prescribed in unregistered agreements between employers and employees.

Weighting: To arrive at a weighted average rate for a particular field (e.g. rate for occupations in Tasmania covered by Commonwealth awards), certain data are required. The basic initial information is the award rate applying to each occupation and its relative significance (broadly, the numbers in each occupation).

The calculation of average minimum rates is based on the occupational structure existing in 1954. Weights for each industry and each occupation were derived from two sample surveys made by the Bureau in that year. The first was the Survey of Awards in April, 1954 which showed the number of employees covered by individual awards, determinations and agreements, and provided employee weights for each industry as well as a basis for the Survey of Award Occupations made in November, 1954. This second survey showed the number of employees in each occupation within selected awards, &c. in the various industries, thereby providing weights for each occupation.

The individual minimum wage rates combined to give the averages shown in the tables are those for representative occupations within each industry. They have been derived entirely from representative awards, determinations and agreements in force at the end of each period commencing with March, 1939 for adult males, and March, 1951 for adult females. In Australian figures for adult male rates, 2,313 individual award occupations are included; for adult female rates, 515; a lesser number is used in determining Tasmanian rates. By use of the industry and occupation weights derived from the surveys of 1954, rates for these occupations were combined to give weighted averages for each industry group for each State and for Australia. Because of coverage difficulties, the rural industry is not included.

Since the aim is to measure movements in prescribed minimum rates of "wages" as distinct from "salaries", those awards, &c. which relate solely or mainly to salary-earners are excluded.

Weighted averages of the components of the total minimum weekly wage rate, i.e. basic wage, margin and loading, are calculated separately for adult male employees covered by Commonwealth awards, &c., and for those covered by State awards, &c.

"Commonwealth Awards, &c.": These include awards of, or agreements registered with, the Commonwealth Conciliation and Arbitration Commission, and determinations of the Commonwealth Public Service Arbitrator.

"State Awards, &c.": These include awards or determinations of, or agreements registered with, State industrial tribunals, together with certain unregistered agreements, where these are dominant in the particular industries to which they refer. (In Tasmania, the principal tribunals are the State Wages Boards.)

"Basic Wage Rates": These are weighted averages of the weekly rates prescribed in awards, &c. for the occupations included in the calculation. For industries other than mining, metropolitan basic wage rates have generally been used. However, there are a number of occupations for which basic wage rates other than the metropolitan rate are prescribed. In all such cases, the basic wage rate actually paid is used in the tables. As a result, the weighted average basic wage shown in this section differs from the Hobart basic wage appearing elsewhere.

"Margins": These are minimum amounts, in addition to the basic wage, awarded to particular classifications of employees for special features such as skill, experience, arduousness or other like factors.

"Loadings": These include industry loadings and other general loadings prescribed in awards, &c. for the occupations included in the calculation. Loadings that are not applicable to all workers in a specified award occupation (for example, those payable because of length of service; working in wet, dirty or confined spaces, &c.) are not included in the calculation.

Limitation: The wage rates shown in the tables in this section should not be regarded as actual current averages, but rather as indexes expressed in money terms, indicative of trends. The wage rates do not measure the relative level of minimum wages as between States.

Minimum weekly wage rates for adult males should not be compared with "average weekly earnings per employed male unit" appearing in a later section of this chapter; the latter includes not only the earnings of adult wage-earners but also those of salaried employees, junior wage-earners and part-time and casual employees.

Male and Female Rates

The following table summarises minimum weekly wage rates for adult males and adult females in Tasmania from 1951 onwards. The averages include Commonwealth and State awards, &c. and are for all industry groups combined:

**Minimum Weekly Wage Rates (a)
Adult Males and Adult Females—All Groups
(\$)**

End of—	Adult Rate		End of—	Adult Rate	
	Male	Female		Male	Female
December—1951 ..	23.82	16.56	December—1959..	34.71	23.42
1952 ..	27.22	18.92	1960..	35.15	23.88
1953 ..	28.33	19.72	1961..	36.27	24.82
1954 ..	28.77	19.76	1962..	36.48	24.83
1955 ..	29.36	20.00	1963..	37.29	25.21
1956 ..	31.39	21.52	1964..	39.66	27.02
1957 ..	31.85	21.90	1965..	40.64	27.95
1958 ..	32.36	22.12	March— 1966..	40.84	27.95

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime), as prescribed in awards, determinations, &c.

Rates in Industry Groups

In the next table, details are shown of Tasmanian minimum weekly wage rates in the various industry groups for adult males and adult females; also the same information converted to index numbers with the Australian weighted average weekly wage rate for 1954 equated with 100:

**Minimum Weekly Wage Rates and Index Numbers
Adult Males and Adult Females—Industry Groups, 30th September, 1965**

Industry Group	Adult Males		Adult Females	
	Rates of Wage (a) (\$)	Index Numbers (b)	Rates of Wage (a) (\$)	Index Numbers (b)
Mining and Quarrying	41.06	145.4	..	..
Manufacturing—				
Engineering, Metals, Vehicles, &c. ..	40.97	145.1	27.00	135.6
Textiles, Clothing and Footwear ..	37.74	133.6	26.44	132.8
Food, Drink and Tobacco	39.12	138.5	26.55	133.4
Sawmilling, Furniture, &c.	38.77	137.3	26.72	134.3
Paper, Printing, &c.	39.95	141.5		
Other Manufacturing	39.40	139.5		
All Manufacturing Groups	39.81	140.9	26.58	133.5
Building and Construction	40.72	144.2	..	..
Railway Services	39.44	139.7	31.58	158.6
Road and Air Transport	40.89	144.8		
Shipping and Stevedoring	39.24	138.9		
Communication	45.80	162.2	27.59	138.6
Wholesale and Retail Trade	40.40	143.0		
Public Authority (n.e.i.) and Community and Business Services	42.28	149.7	31.25	157.0
Amusement, Hotels, Personal Service, &c...	38.14	135.0	27.32	137.2
All Industry Groups	40.32	142.8	27.60	138.7

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, &c.

(b) Base of index numbers—weighted average weekly wage rate, Australia, 1954 = 100.

Index Numbers

In the previous table, the minimum weekly wage rates have been expressed as index numbers. It should be emphasised that the rates themselves are not actual current averages but are rather indexes expressed in money terms; as such they are indicative of trends rather than of levels.

The following table shows, in summary form, the index numbers for adult male and adult female minimum weekly wage rates in Tasmania from 1960:

**Minimum Weekly Wage Rates—Index Numbers, All Groups
Adult Males and Adult Females**

End of—	Index Numbers (a)		End of—	Index Numbers (a)	
	Male	Female		Male	Female
December—1960 ..	124.5	120.0	December—1964..	140.4	135.7
1961 ..	128.4	124.7	June—1965..	140.8	137.2
1962 ..	129.2	124.7	September—1965..	142.8	138.7
1963 ..	132.0	126.6	December—1965..	143.9	140.4

(a) Base of index numbers—weighted average weekly wage rate, Australia, 1954 = 100.

Components of Total Minimum Wage Rates (Male)

The next table has been compiled to show the individual wage components i.e. basic wage, margin and loading and also the distinction between Commonwealth and State awards, &c. The two elements, Commonwealth and State, are combined to produce the adult male minimum weekly wage rate for Tasmania:

Minimum Weekly Wage Rates Each December From 1960 (a)
Components of Total Wage Rate, All Groups—Adult Males
(\$)

Particulars	1960	1961	1962	1963	1964	1965
Commonwealth Awards, &c.—						
Basic Wage ..	28.49	29.37	29.33	29.33	31.21	31.21
Margin ..	6.18	6.24	6.48	7.12	7.38	8.20
Loading ..	0.20	0.20	0.26	0.34	0.55	0.77
Total Wage	34.87	35.81	36.07	36.79	39.14	40.18
State Awards, &c.—						
Basic Wage ..	28.21	29.42	29.42	29.48	31.39	31.39
Margin ..	6.67	6.73	6.74	7.64	7.93	8.74
Loading ..	0.74	0.83	0.93	0.96	1.13	1.20
Total Wage	35.62	36.98	37.09	38.08	40.45	41.33
All Awards, &c.—						
Basic Wage ..	28.38	29.38	29.37	29.39	31.28	31.28
Margin ..	6.35	6.44	6.58	7.32	7.60	8.41
Loading ..	0.42	0.45	0.53	0.58	0.78	0.95
Total Wage	35.15	36.27	36.48	37.29	39.66	40.64

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, &c.

The following table shows, for Tasmania, in summary form, male adult minimum weekly wage rates from 1939, in terms of basic wage, margin and loading:

Minimum Weekly Wage Rates From 1939 (a)
Components of Total Wage Rate, All Groups—Adult Males
(\$)

End of—	All Awards, &c. (Commonwealth and State)			
	Basic Wage	Margin	Loading	Total Wage
December—1939 ..	(b)	(b)	(b)	9.22
1945 ..	9.39	1.74	0.43	11.56
1950 ..	15.98	3.37	0.45	19.80
1955 ..	24.03	4.81	0.52	29.36
1956 ..	25.98	4.90	0.51	31.39
1957 ..	26.47	4.92	0.46	31.85
1958 ..	26.89	5.08	0.39	32.36
1959 ..	28.14	6.15	0.42	34.71
1960 ..	28.38	6.35	0.42	35.15
1961 ..	29.38	6.44	0.45	36.27
1962 ..	29.37	6.58	0.53	36.48
1963 ..	29.39	7.32	0.58	37.29
1964 ..	31.28	7.60	0.78	39.66
June—1965 ..	31.28	7.71	0.79	39.78
September—1965 ..	31.28	8.22	0.82	40.32
December—1965 ..	31.28	8.41	0.95	40.64

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) as prescribed in awards, determinations, &c.

(b) Not available.

Australian Rates

In the next table, rates and index numbers are shown for each Australian State. Neither the wage rates nor the corresponding index numbers measure the relative level of minimum wages as between States. Both measures, i.e. the wage rates and the corresponding index numbers, are indicative of trends but it should be noted that the wage rates are not to be regarded as actual current averages but rather as indexes expressed in money terms.

**Australia—Minimum Weekly Wage Rates—All Groups
Adult Males**

End of—	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Australia
RATES OF WAGE (a) (\$)							
December—1962	37.37	36.37	35.97	35.65	36.57	36.48	36.66
1963	38.28	37.20	37.00	36.40	37.50	37.29	37.55
1964	40.23	39.46	39.21	38.67	38.82	39.66	39.62
September—1965	40.82	40.22	41.42	39.33	40.15	40.32	40.54
December—1965	40.98	40.32	41.64	39.44	40.48	40.64	40.70
INDEX NUMBERS (b)							
December—1962	132.3	128.8	127.4	126.2	129.5	129.2	129.8
1963	135.5	131.7	131.0	128.9	132.8	132.0	133.0
1964	142.5	139.7	138.8	136.9	137.5	140.4	140.3
September—1965	144.5	142.4	146.7	139.3	142.2	142.8	143.5
December—1965	145.1	142.8	147.4	139.6	143.4	143.9	144.1

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime), as prescribed in awards, determinations, &c.

(b) Base of index numbers—weighted average weekly wage rate, Australia, 1954 = 100.

Minimum Hourly Wage Rates in Tasmania

General

Minimum hourly wage rates is the short title for "weighted average minimum hourly rates payable". The concept is completely analogous to that embodied in minimum weekly wage rates and the calculation is similarly based on rates prescribed in awards or determinations of Commonwealth and State industrial authorities or in agreements registered with them.

Definitions

Hours of Work: In the fixation of weekly wage rates, most industrial tribunals prescribe the number of hours constituting a full week's work for the wage rates specified. The hours of work so prescribed form the basis of the compilation of the weighted averages of hourly rates.

Rural industry is excluded from the calculation of minimum weekly wage rates. Rural industry, and in addition the shipping and stevedoring industry, are excluded from the calculation of minimum hourly wage rates; the shipping and stevedoring group is excluded since definite particulars for the computation of hourly wage rates are not available.

The 40-hour week has operated in Australia generally from 1st January, 1948 (N.S.W., from 1st July, 1947). Nevertheless the number of hours constituting a full week's work (excluding overtime) differs between occupations

and/or States. The weighted average standard hours of work (excluding overtime) prescribed in awards, determinations and agreements for a full working week, in respect of adult male workers in all industry groups except rural, and shipping and stevedoring, at 31st December, 1964, were: N.S.W., 39.95; Victoria, 39.97; Queensland, 39.98; S.A., 39.96; W.A., 39.89; Tasmania, 39.97; Australia, 39.96. Corresponding figures for adult female workers at 31st December, 1964, were: N.S.W., 39.53; Victoria, 39.81; Queensland, 39.70; S.A., 39.77; W.A., 39.78; Tasmania, 39.56; Australia, 39.67.

Minimum Weekly Wage Rate Definitions: Apart from exclusion of the shipping and stevedoring industry, the definitions in the section headed "minimum weekly wage rates" apply with equal force to the calculation of minimum hourly wage rates.

Summary of Details

The following table shows, for Tasmania, minimum hourly wage rates for adult male and adult female workers in all industries (except rural, and shipping and stevedoring) since 1939:

Minimum Hourly Wage Rates, All Groups (a)
Adult Males and Adult Females

End of—	Males (b)	Females (c)	End of—	Males (b)	Females (c)
RATE OF WAGE (\$)					
December—1939 ..	0.2095	n.a.	December—1962..	0.9142	0.6277
1945 ..	0.2642	n.a.	1963..	0.9340	0.6361
1950 ..	0.4952	n.a.	1964..	0.9937	0.6819
1955 ..	0.7371	0.5056	March— 1965..	0.9956	0.6857
1959 ..	0.8698	0.5921	June— 1965..	0.9968	0.6892
1960 ..	0.8808	0.6037	September—1965..	1.0103	0.6966
1961 ..	0.9086	0.6275	December— 1965..	1.0187	0.7052
INDEX NUMBERS (d)					
December—1939 ..	29.6	n.a.	December—1962..	129.2	125.1
1945 ..	37.3	n.a.	1963..	132.0	126.8
1950 ..	70.0	n.a.	1964..	140.4	135.9
1955 ..	104.2	100.8	March— 1965..	140.7	136.7
1959 ..	122.9	118.0	June— 1965..	140.9	137.4
1960 ..	124.5	120.3	September—1965..	142.8	138.8
1961 ..	128.4	125.1	December— 1965..	144.0	140.5

(a) Weighted average minimum hourly rates payable.

(b) All industry groups except rural, and shipping and stevedoring.

(c) All industry groups except rural, mining and quarrying, and building and construction.

(d) Base of index numbers—weighted average hourly wage rate, Australia, 1954 = 100.

Average Weekly Earnings in Tasmania

Source of Data

The figures in the following section are derived from particulars of employment and of wages and salaries recorded on pay-roll tax returns, from other direct collections and from estimates of the unrecorded balance. (In general, businesses with pay-rolls of less than \$1,734 per month are exempt from pay-roll tax and do not need to supply monthly details of employment and of wages and salaries.) Pay of members of the defence forces is not included.

Definitions

"Employed Male Unit": This is a special unit devised to overcome the difficulty that particulars of wages and salaries are not available separately for males and females. (The basic data available are the number of males, the number of females and the total pay-roll only.) The number of females is converted to a *lesser equivalent number* of males by taking into account the approximate ratio of female to male earnings; a divisor for deriving average "male" earnings is then obtained by adding the actual number of males to the calculated number of "male equivalents". The divisor so obtained consists of "employed male units". As it is not possible to estimate the ratio of male to female earnings in the several States, the same ratio is used for each State. Because the actual ratio may vary between States, precise comparisons between average earnings in different States cannot be made on the basis of the figures.

Components of Pay-roll: Pay-roll includes, in addition to wages at award rates, the earnings of salaried employees, over-time earnings, over-award and bonus payments, and payments made in advance or retrospectively, (e.g. advances of annual leave pay). Included also are the wages and salaries, not only of adults, but also of juniors; the earnings may relate to full-time, part-time or casual workers.

Invalid Comparison: Average earnings per employed male unit cannot be compared with male minimum weekly wage rates shown in the previous section. Minimum weekly wage rates relate to award rates for adult male wage earners in non-rural industry for a full week's work, at the end of each month or year; the average weekly earnings per employed male unit are derived from the pay-roll concept shown in the previous paragraph, and obviously cover a wider field of earnings and of wage and salary earners.

Seasonal Influence: Quarterly figures are affected by seasonal influences. Comparisons as to trends are generally best made by relating complete years or corresponding periods of incomplete years. However, from December quarter, 1963, comparisons with corresponding quarters of earlier years are affected by additional prepayments arising from three weeks' leave.

Annual and Quarterly Details

The following table shows, for Tasmania, average weekly earnings per employed male unit since 1954-55; the figures are arranged both as quarterly and annual averages.

Average Weekly Earnings Per Employed Male Unit (a)
(£)

Year	Average for Quarter Ending—				Average for Year
	September	December	March	June	
1954-55	31.40	32.80	32.50	36.00	33.20
1955-56	34.40	35.40	34.70	37.80	35.60
1956-57	36.40	38.30	37.00	39.20	37.70
1957-58	36.70	38.70	37.50	40.20	38.30
1958-59	37.90	41.20	37.60	40.30	39.20
1959-60	40.20	42.30	40.70	44.50	41.90
1960-61	41.90	44.20	42.50	44.70	43.30
1961-62	43.00	45.80	44.50	47.80	45.30
1962-63	44.90	45.90	44.50	48.30	45.90
1963-64	46.50	50.80	47.30	49.60	48.60
1964-65	49.90	50.90	50.00	52.40	50.80
1965-66	50.90	56.80	53.50	55.60	54.20

(a) For definitions, see section headed "Definitions".

Australian Details

The next table shows average weekly earnings per employed male unit for each Australian State. The calculation of the number of "employed male units" depends on use of a common ratio of male to female earnings for all States; because the actual ratio may vary between States, precise comparisons between average earnings in different States cannot be made on the basis of the figures shown.

Australia—Average Weekly Earnings Per Employed Male Unit (a)
(£)

Period	N.S.W. (b)	Vic.	Qld.	S.A. (c)	W.A.	Tas.	Australia
1954-55 ..	35.40	35.30	31.20	33.80	32.30	33.20	34.30
1959-60 ..	45.70	45.50	39.40	41.80	39.20	41.90	43.90
1964-65 ..	56.60	56.30	50.40	51.70	49.30	50.80	54.60
Sept. Qtr., 1965	58.20	59.00	52.60	54.30	52.70	50.90	56.70
March Qtr., 1966	56.80	55.40	49.20	51.10	52.00	53.50	54.50

(a) For definitions, see section headed "Definitions".

(b) Includes the Australian Capital Territory.

(c) Includes the Northern Territory.

WAGE-FIXING AUTHORITIES

Tasmanian Wages Boards

Introduction

The Tasmanian Wages Board system consists of a large number of autonomous Boards set up under an Act of the Tasmanian Parliament to prescribe the minimum rates of wages payable, and conditions of service to be provided, by employers engaged in particular trades.

Early Legislation: The first legislation of this kind was passed in 1911 but was superseded by an Act of 1920. The prescriptions of Boards are called Determinations. Those made in the earliest phase of the system reflected the relatively primitive state of industrial development and hence a simpler mode of industrial relations than is general today. Classifications of occupations tended to be few and conditions of employment were not particularised in such detail as they are today. Provision for such amenities as recreation and sick leave, and payment for statutory holidays were not known.

Recent Legislation: In more recent times, certain matters which lay within the province of Wages Boards have been removed by specific legislation providing common conditions for all employees. Minimum standards of sanitary, messing and change-room facilities in work-places are now laid down by Regulations made under the *Factories, Shops and Offices Act* 1958. Long service leave arrangements, which made a brief appearance in some Determinations, are now cared for by the *Tasmanian Long Service Leave Act* of 1956. Finally, although Wages Boards have continued to prescribe the rates of pay of apprentices, authority to determine such rates is now the prerogative of the Apprenticeship Commission, which can displace the Board's prescription whenever it so desires. The Commission fully exercises its powers over the indentures and training of apprentices.

Powers of Boards

The powers retained and exercised by Wages Boards can be distinguished as mandatory and permissive:

Mandatory: Every Board *must* determine minimum rates of wages, and the ordinary hours of work for persons engaged in the trades in respect of which it is established. It must determine which adult employees are tradesmen, and specify, where the proportion of junior workers is limited, the class of work such workers can do. The Board has the obligation, further, to set the date when its Determination will come into force—a date limited, with regard to retrospectivity, to 14 days before the meeting at which the Determination is made.

Permissive: Boards *may* extend their Determinations to include any or all of the following additional provisions: penalty rates for overtime, week-end, or holiday work, casual work, and other rates related to time factors; the period of recreational leave; deductions from wages for board and lodgings where the employee is accommodated and/or supplied with meals by the employer; the day of the week and hour at which wages shall be paid; special rates where the type or conditions of work warrant such consideration; the proportion of juniors to adults that may be employed in a particular establishment, or the prohibition of the employment of juniors; weekly wages for any specified class of employee, without relation to the hours worked or to normal overtime entitlement; and the length of notice for termination of the contract of service.

Constitution and Mode of Operation of Boards

Meaning of Trade: Tasmanian Wages Boards are constituted under a Statute of 1920, in respect of trades (e.g. Hairdressers, Carpet-makers) or groups of trades having a common link (e.g. Builders and Painters, embracing employers of bricklayers, carpenters, painters, glaziers and builders' labourers; or Automotive Industries which associate automotive engineers, service-station proprietors, motor vehicle builders and repairmen, and sellers of motor vehicle spares). The word 'trade' is given a wide enough connotation to cover professions such as Doctors and Dentists (in their character of employers) and providers of services such as Licensed Clubs and Restaurant-Keepers. The constitutional nexus of a Board is the trade (or industry, or profession, as noted above) of the employer, not the common occupation of the employees.

Chairman: Each Board, of which there are about seventy at present in active existence, consists of an equal number of representatives of employers and employees and a chairman appointed by the Government. Prior to an amendment of the Act in 1961, each Board might legally have had its own separate chairman, though in practice one, and only one, person was appointed to hold this office on every Board. The 1961 amendment provided for the appointment of a full-time Chairman of Wages Boards, who united in his person the chairmanship of all Boards within the system. An officer of the Department of Labour and Industry is Secretary of each Board.

Members: Board members are selected and appointed by the responsible Minister (the Chief Secretary) from persons engaged as employers or managing experts in the trade or trades appropriate to the Board, and from those who are employees of such persons. Officers of industrial organisations or associations of either employers, or employees, whose members are engaged in a particular trade, are also eligible to sit on the relevant Boards, with the limitation that on

any Board having four or more representative members on each side, not more than two of these may be officers of organisations of this kind, while Boards having three or fewer members on each side may have only one such officer. Persons in legal practice are disqualified from appointment as members of any Board except only as representatives of employers on the Barristers and Solicitors Wages Board.

Size of Boards: The size of Boards varies, the number of representative members being that considered expedient in all the circumstances by the Minister. The largest Board, Electrolytic Zinc, has eight representative members on each side, while to the Fuel Merchants Board belongs the distinction of having merely one representative each of employers and employees.

Selection: Representative members are appointed to a three-year term of office, but when the expiration of a Board's term is imminent the Minister may give notice of his intention to re-appoint the representative members unless valid objection is lodged. The Minister's selections for appointment to a Board, or his decision to re-appoint retiring members, may be objected to by persons engaged in the trade. In the latter case, new nominations are called for, and if the number received exceeds the number of positions to be filled, the Minister must make a selection. If objection is again raised, an election is held from the list of nominees, to fill the number of required positions. The roll of electors is compiled in respect of employers' representatives from the names of all persons known to be engaged in the trade, or in respect of employees' representatives, from all persons employed by persons so engaged in the trade. A returning officer is appointed by the Minister, who normally deposes the State Chief Electoral Officer to conduct the ballot. Successful candidates are then formally appointed to the Board.

Elections: Competition for places on Wages Boards is the exceptional case, the initial appointment and subsequent reappointment of Boards appearing to excite little attention in the trades affected. Occasionally, however, the Minister's selections for members, or his proposal to reappoint retiring members, are objected to and an election is precipitated, such events having occurred about once a year in recent times.

Conduct of Boards: The Boards are intended to practise conciliation with the Chairman assuming the role of moderator, or conciliator-in-chief. Proposals may come from either side of the table and are voted upon after opportunity for deliberation and the production of evidence, the Chairman exercising a casting vote if the representative members are tied. (A member unable to be present may be represented by a proxy appointed by him, but if either side lacks a representative, it is the custom for the other to grant a "pair". A quorum consists of half the members of each side, together with the Chairman.) The Chairman wields no arbitral power but is enjoined, when there is equal division between the representative members, to do all things ("whether by adjourning... by making suggestions, consulting with members... or otherwise") needful to obtain agreement of the Board, before deciding the matter at issue on his casting vote.

Secret Hearings: It has become invariable custom not to admit the public or press-reporters to proceedings for at least two considerations; firstly the safeguarding of confidential information, such as trade secrets or the financial standing of persons engaged in the trade, which may be mentioned by Board members, and secondly, conciliation works best in the absence of a distracting audience or the fear that published reports of proceedings might be partial.

Witnesses: A Board, on the other hand, has the power to summon witnesses considered to be able to inform members on particular matters before it. While such witnesses may be required to present their evidence on oath, this practice is frequently waived to ensure an atmosphere of unconstraint and cordiality.

Determinations: From the record of decisions made at a Board meeting by its Secretary, and confirmed by the members after hearing it read, the code of wage-rates, allowances and conditions for the particular trade, known as the Determination of the particular Wages Board, is drafted by the Chairman, and upon its gazettal becomes the law. General review meetings, at which the entire Determination is recommitted for consideration, may not be convened more often than once every two years, and in practice tend to be more widely spaced, especially with the less active Boards. If the Minister is satisfied, however, that because of changed conditions or the discovery of a significant anomaly in a Determination, a Board should be reconvened after a shorter interval, he may authorise such a meeting, but its agenda must specify the matters to be considered; this excludes the transaction of any other matter. Any decisions of a Board resulting from a specially convened meeting are translated into the current Determination by means of a notice of variation, and become part of the basic code.

The Concept of a Basic Wage

Before World War II: The concept of a basic wage, present almost from the inception of the Federal Arbitration system, was little regarded by Tasmanian Wages Boards until the years immediately preceding, or during, the 1939-45 War. Provision was first inserted in the *Wages Boards Act 1928* for Boards to prescribe an adjustable basic wage, but this was ignored by many Boards, which for many years afterwards expressed all wage-rates as an indivisible amount, without distinguishing what were later to be known as basic and marginal components. Trades having some employees subject to Federal Awards showed a tendency to adopt a basic wage ahead of others, and in several instances (e.g. Ironmongers), a basic wage was written into a part of the Determination applying to Carters and Drivers, as much as ten years before the principle was adopted for the primary classes of employees.

Lack of Uniformity: With the general upward movement of living costs generated by the inflationary pressures of the war and its aftermath, most Boards came to recognise the expediency of incorporating a basic wage clause applying to all persons covered by Determinations, with provision for automatic adjustment in accordance with quarterly movements in the "C" Series Retail Price Index compiled by the Commonwealth Statistician. But, owing to the autonomy of each Wages Board, no uniform basic wage was adopted. In fact, the existence of separate indexes for Hobart and for four other named Tasmanian towns, another for the weighted average of these five towns, and such "national" weighted averages as those of the "Six Capital Cities" and "30 (Australian) Towns", gave to the Boards a range of differing values from which to select one—or more—considered appropriate for the particular trade. Thus Boards covering employees dispersed in several centres were inclined to determine separate basic wages for Hobart, Launceston and elsewhere; or regionally-located Boards set a basic wage related to the index for a local town, e.g. Devonport or Queenstown. The deciding factor for yet other Boards, conscious of the links of their trades with particular Federal Awards, was the basic wage prescribed in those Awards, commonly based on

the "Six Capitals" index. The resulting pattern was a medley of basic wages observed within the State, especially confusing to undertakings which were subject to several Determinations and/or Awards.

Suspension of Adjustments: Abolition in 1953 of automatic quarterly adjustments in Federal Awards exposed the dependence which Wages Boards had developed on Federal initiative in the determination of basic wages. The outcome of an urgently summoned conference of representatives of employer and employee organisations involved in the Tasmanian economy was the decision not to abolish but to *suspend* quarterly adjustments to the basic wage in State Determinations. The Chairman of Wages Boards, who had presided at the conference, warned that if, after a trial period, the "C" Series index resumed its rapid rate of increase, the Boards should make application for a meeting to reconsider the position. When in the latter part of 1955, the continuance of upward movement in the index prompted this very development, the Chairman stated at the end of a second "plenary" conference that adjustments should recommence from the following February (1956) unless the index fell in the interim. As it did not, automatic adjustments were duly resumed as from the first pay period in that month.

Operation of the automatic adjustments was shortlived, however, in all but a few Determinations, for the declaration by the Commonwealth Arbitration Commission in May, 1956 of the first increase in the Federal basic wage since its freezing in 1953, prompted the calling of a third general conference to reconsider the question of basic wage fixation in Tasmania and a new pronouncement of policy was made by the Wages Board Chairman.

In a long statement, the Chairman traced the course which the various basic wages of the State had traversed in recent years and strongly deprecated the failure of the Commonwealth Court to seek by means of conferences with State industrial authorities an agreement on a uniform basic wage throughout the land. Re-affirming an earlier opinion, based on observation of the movement of the "C" Series Retail Price Index, that "the basic wage at present prescribed by wages boards does nothing more than ensure a reasonable standard of living", the Chairman said he would not be prepared to cast his vote at any Wages Board meeting to reduce the then Hobart basic wage by 16s. (\$1.60) to align it with the new Federal basic wage for Hobart. He would, however, support suspension, for a period, of further automatic adjustments on the dual grounds of the need of some industries for wage stability to enable long-term tendering or price-fixing, and the danger that relatively higher wage-costs in Tasmania could cause the closure or transfer of industries.

In the aftermath of these remarks, all Boards met and with four exceptions followed these recommendations. Two Boards decided to adopt the Federal basic wage (though relating it to different indexes), one suspended adjustments as from the *previous* quarter, and although the fourth Board decided to continue automatic adjustments, this had negligible effect because its Determination had become virtually superfluous.

Adoption of Federal Standard: Fortunately the gradient of the graph of cost-of-living increases was lowered during the following years, engendering rather less anxiety about basic wage adjustment. Boards, with few exceptions, deleted reference to the Statistician's index from their Determinations and deferred action to vary their basic wage until, by the third of the relatively small increases resulting from annual reviews of the Federal basic wage in 1957, 1958, and 1959, the Federal wage for Hobart attained a level 10s. (\$1) above the amount which had been operative for Hobart in most Determinations

from August, 1956 onwards, namely £13.12s. (\$27.20). Convened in June, 1959, for the first State basic wage revision in those three years, the Boards re-established, in respect of the amount determined for the Hobart area, equality with the new Federal basic wage for the area, by prescribing the amount of £14.2s. (\$28.20). The next alteration also followed a Federal basic wage increase, in 1961, when the Boards raised the local wage by the same amount as that awarded by the Commonwealth tribunal, namely 12s. (\$1.20). The £1 (\$2) adjustment of 1964 was also observed in State Wages Boards' Determinations.

Rationalisation: Two significant rationalisations have occurred in recent years. The first, resulting from a broadly-based conference representative of employer and employee organisations, convened by the Minister in December, 1960 with the Chairman of Wages Boards presiding, was the adoption of the Hobart Commonwealth basic wage as a standard for the State (departed from only by those Boards which retain a basic wage of "Six Capitals" or "Four Capitals" origin, derived from the existence of a so-called "parent" Award in the Federal jurisdiction). At this point of time, however, prescriptions of 32s. (\$3.20) and 5s. (50 cents) respectively above the Federal basic wage for Hobart were current in two Determinations, these Boards having diverged from the prevailing practice of the recent past by resuming adjustment of their basic wage amounts. The smaller disparity (in the Softgoods Determination) was removed on the occasion of the next general basic wage variation, in 1961, but the Country Councils Wages Board's male basic wage of £15.14s. (\$31.40) remained conspicuously above that in every other Determination until overtaken by the further Federal basic wage variation of June, 1964.

The second, and more important, development was the amendment of the *Wages Boards Act* in 1961, to permit Boards to make explicit reference to the basic wage in a particular Federal Award as having application to the employees subject to a Determination; also the provision by way of Regulation for the Chairman of Wages Boards, in the event of any change made in such Federal basic wage, to prepare a notice advising the actual adjustments of the amount of the basic wage prescribed in the Determination, and any amounts directly related to such basic wage. Boards which took advantage of this provision of the Act and inserted an appropriate clause in their Determinations thereby divested themselves of the need to meet to deal specifically with basic wage claims in the wake of Federal basic wage increases. Following the appointment in April, 1962, of the first permanent Chairman of Wages Boards, every Board was convened and all but two (one of which was the Country Councils Board, referred to earlier) re-framed their basic wage clauses in the manner envisaged in the amended Act, in the majority of cases citing the basic wage of the Federal Metal Trades Award as the operative provision.

Federal Standard Still Optional: Adoption of this procedure by the overwhelming number of Boards made fully explicit the relationship that existed in fact between the State and the Federal jurisdiction in respect of the basic wage. However, the transmission of changes in the Federal basic wage to State basic wages and related clauses (as, for instance, the prescription of rates for juniors or apprentices, which familiarly are expressed as percentages of the male basic wage) is automatic only so long as a Board chooses to retain the existing provision. By formal decision, a Board could, at any time it meets for a general or special review, delete this connecting-rod and thus sever its basic wage from the decisions of the Commonwealth Arbitration Commission.

Three Weeks' Annual Leave in Tasmania

Two Weeks' Leave: Prior to an amendment of the *Wages Boards Act* in 1961, the amount of paid annual leave which Boards were empowered to determine for employees on day work was two weeks, a maximum which

had remained in force for many years, having been set in 1928. Exception to this rule was permitted only in the case of (a) employees on shift work, (b) nurses, and (c) undertakings where a greater period of leave was allowed by mutual agreement between employer and employees. Beyond this point, but seldom resorted to, was a provision that if employer and employee representatives on a Board unanimously so resolved (the Chairman in such event having no vote), the normal limitation on the period of annual leave could be waived.

Amendment of 1961: Three weeks' annual leave, however, had for some time been enjoyed by many employees within the State. Apart from the State Public Service and certain classes of employees such as railway workers, who qualified for the longer period by having completed a stipulated number of years of service, three weeks' leave had been allowed to the employees of a number of large industrial undertakings under industrial agreements. In lifting the ceiling formerly imposed by the Act to *three* weeks for day-workers, the State legislature in 1961 was therefore doing no more than providing for the *possibility* of increased leave for employees within the Wages Boards system. It was not, as had been done by the N.S.W. Parliament in 1958, legislating general entitlement of three weeks' annual leave to have effect as from a certain future date.

Conference of 1962: To enable thorough discussion, the Chief Secretary convened a conference of employer and employee interests in the private sector of the State's economy. The Ironmongers Wages Board, to whom an initial submission had been addressed, met on 29th May, 1962 and promptly adjourned so that the discussion could proceed in the broader forum of the conference. Organisations represented at the conference on the employers' side were: Employers Federation of Tasmania, Chamber of Manufactures, Electrolytic Zinc Industries, Australian Mines and Metals Association, Tasmanian Master Drapers, Tasmanian Farmers, Stockowners and Orchardists Assn., Meat and Allied Trades Federation, and Master Builders Association. Employee organisations with officers present were: Federated Clerks Union, Australian Workers Union, Federated Ironworkers Association, Electrical Trade Union, Building Workers Industrial Union, Furnishing Trades Union and Australian Meat Industry Employees Union.

Argument: Lengthy submissions in favour of the increased leave were put forward and the opposing case was then presented by employer representatives. The exchange of submissions occupied several days. In part, the employers' case was based on the contention that a decision to introduce three weeks' leave as a general entitlement should not be made before the Commonwealth Arbitration Commission decided when the principle should be adopted in Federal Awards. It was argued that Tasmania's economy could not bear a burden not so far imposed except in N.S.W.

Decision: The Chairman, at the conclusion of the meeting, reserved his decision and on the resumption of the conference announced that his vote would be cast in favour of three weeks' annual leave for the employees under the Ironmongers Board, and subsequently for all employees within the State system. The Chairman set out a summary of the views he had heard expressed in the conference, and of the reasons for his decision. He found that the greatest single desire of employees in the Tasmanian economy was extended leave, even to the partial prejudice of their other aspirations in the industrial sphere. Granting this claim would assist, he believed, in maintaining the high degree of industrial harmony which had prevailed in the State. Although it

undoubtedly would raise the costs of Tasmanian industry, he was not convinced that the additional leave would be economically insupportable, or that it would materially affect entrepreneurial confidence.

Independence: Rejecting the doctrine that Tasmania should wait upon the initiative of the Commonwealth Commission, the Chairman's decision contained this passage: "It has never been the intention that the State Wages Boards should consistently follow the patterns set in the Federal jurisdiction, and it is clearly evident that where this State tribunal has seen the necessity to do so, it has quite independently adopted standards at variance with Federal standards on major issues."

Implementation: At a meeting of the Electrolytic Zinc Wages Board a few weeks later, the Chairman again used his casting vote to maintain the entitlement of continuous shift-workers to an additional week of annual leave beyond the period allowed to day-workers.

During the remainder of 1962, every Wages Board was convened and all Boards but two made provision for the additional week for day-workers and continuous shift-workers alike. 1963 was made the transitional year in which the extra week would accrue for the first time. In many cases, the decision was by agreement of the Board, but if not, on the vote of the Chairman cast in favour of the employees' claim. The two Boards which by agreement of representative members deferred action in the matter were concerned with trades whose employees, save for a minority, were subject to Federal Awards, and the members considered they should not act until three weeks' leave was implemented in those Awards. When the Commonwealth Arbitration Commission in 1963 brought down its decision granting the longer leave to Federal workers, these two Boards conformed with the general Tasmanian pattern in their leave provisions.

Interdependence of Wage-Fixing Authorities

Dual Authority: State Wages Boards and the Commonwealth Conciliation and Arbitration Commission exercise authority in Tasmania, both frequently exercising their powers within the same industry. Even though the respective tribunals have no official contacts with each other, the circumstance that professionals of the industrial relations field (employers' advocates on the one hand, trade union officials on the other) alternate their participation in Wages Boards meetings with attendance before proceedings of Federal Conciliation Commissioners, ensures that both tribunals stand on common ground in their sources of information.

Types of Claim: Although their methods of operation differ markedly in conception, especially in the absence of an arbitral power in the brief of the Wages Boards Chairman, there exists a tendency for the State system to assimilate to the Federal, even though the differences are still very great. In part, this tendency arises from imperfect comprehension of the historically-evolved Wages Board system (with its accent on informal discussion and the arrival at concordant views under the helm of the Chairman) by the professional advocates. The industrial schooling of such advocates has frequently been within the framework of arbitration, or outside of Tasmania, where the serving of log and counter-log is normal practice, the proponents appealing to the concept of 'ambit', or the setting up of claims at a certain level for the purpose of long-term policy, rather than at a more moderate level within the possibility of immediate realisation.

Arbitration versus Conciliation: When these professionals sit on Boards, and nowadays every important Wages Board has one or more representative members of this type, their propensity is to adopt a somewhat modified form of the approach which is appropriate to Federal tribunal proceedings. One effect of this 'over-stated' approach is to inhibit contributions by the 'lay' members, the employers and employees directly from the trade. The net result is that the Chairman, from being primarily a harmoniser of initially discordant views, is not infrequently impelled to take up an intermediate position between the rigid stances adopted by the opposing sides. In other words, the parties on some occasions are not prepared to relax the deadlock in their publicly stated positions, but indicate their readiness to accept a decision as much arbitrated as mediated.

Finding of Precedents: If Wages Boards know the content of Federal Awards, they do not imitate their provisions closely except in those industries mainly subject to Federal Awards where the Wages Board has been retained as a sort of backstop to deal with new employer-entrants to the industry, or with classes of employees not figuring in the Federal prescription. In many other cases, the Boards are quite jealous of their independence and while the incorporation of Federal provisions, to meet new-felt needs, is not an uncommon occurrence, more often than not a precedent will be sought in another Wages Board Determination. The Chairman, as the one personality linking all Boards, bears considerable responsibility for advising members on what provisions existing elsewhere might usefully be adopted or adapted, or alternatively, on what might be called "standards"—in respect of, say, penalty rates, sick leave provision, or wages for juniors.

Effect of Federal Margins: In an overall sense, wage-rates for comparable work tend to equalise throughout the country, and the Wages Boards are informed, either by professional members or by the Chairman himself, of what rates have been set in other jurisdictions. Often, however, the evidence—especially where partial—on rates obtaining elsewhere is rejected, and local considerations only are invoked to determine the particular issue. General movements in wage-margins, like the basic wage itself, are a special case, and certainly the Boards cannot insulate themselves from major decisions of the Commonwealth Commission. The imminence of a Federal decision has some restraining effect on the variation of margins in State Determinations. Also, after each of the major Metal Trades decisions in the Federal sphere in the past decade, there has been an ensuing wave of marginal adjustments made by State Wages Boards.

Tradesman's Margin: The influence of successive Chairmen has been exerted against slavish adherence to Federal prescriptions. This was illustrated by the 1963 decision on margins in the Tasmanian jurisdiction. Once again the Chairman's decision followed a general conference of representatives of management and labour in the private sector of the State economy. It paralleled the Federal precedent insofar as the generality of employees, the semi-skilled or unskilled, were granted a *ten* per cent increase in margins; but for tradesmen, a *fifteen* per cent increase was determined.

The Chairman declared that the differential treatment of the tradesmen was intended to restore relative value to their margins which had been eroded over the years. Apprentices, whose rates are in most cases directly related to the tradesman's, would benefit immediately, and he hoped this would make the acquisition of trade skills more rewarding and thus attract more young men into apprenticeship training, which had failed to supply industry's needs.

Tasmanian Wages Boards showed independence also in prescribing more favourable rates for unapprenticed juniors than was usual in other States, and in more liberal provisions for sick leave accumulation.

Conciliation in Industrial Disputes

Compulsory Conference: Post-war expansion of industry and the restlessness of the work-force which was a phenomenon of those years led to the insertion in the *Wages Boards Act* in 1950 of a Section (No. 77) providing for the summoning by the Minister of compulsory conferences for the purpose of preventing or settling industrial disputes. A compulsory conference is, however, restricted in its scope to matters that are within the powers of Wages Boards and one additional matter, namely the demarcation of functions of employees or classes of employees. It cannot deal with matters that are not directly concerned with the relations of employers and employees as such.

Convening of Conference: The compulsory conference is presided over by a person directed by the Minister to undertake such duty. In practice, the Chairman of Wages Boards is awarded this assignment if his other duties permit. This likelihood is enhanced by a sub-section which provides that either in addition to or in lieu of convening a conference, the Minister may, if it appears to him necessary for settling a dispute, convene a meeting of a Wages Board. In the latter event the normal minimum notice of seven days given to members may be reduced to 48 hours and may be given by any means considered expedient by the Minister. Persons summoned to attend a conference, may be summoned telegraphically or in writing over the Minister's signature, as the Minister considers expedient, and are obliged to attend and remain at the conference until released by the president appointed by him.

Participants: Persons who may be summoned to a conference include not only the direct participants in a dispute, but also persons concerned in industrial matters which bear on a dispute, and—even more broadly—persons, whether connected with the dispute or not, whose attendance would, in the Minister's opinion, conduce to the prevention or settlement of a dispute.

President's Powers: Section 78, inserted in the Act in 1960, further defined the action which the president of a compulsory conference might take. It provides that, if after considering the views expressed at the conference, he is of the opinion that certain action should be taken to effect the aim of the conference, then he may, by written order, direct such action be taken. An order of this nature is effective only to the extent that it does not require any person to contravene any Wages Board Determination or place himself in legal jeopardy in any way. Persons given directions by the order must be served with a copy of it, either to them in person, or by its being left at their place of work or residence, or by post, and the recipient is bound to comply with the terms of the order under penalty of a fine of £100 (\$200).

Major Issues: Although primarily intended as machinery to avert or quickly bring to an end threatened or actual industrial disputes, the device of a compulsory conference was early and usefully applied to the situation of general industrial issues potentially affecting all Boards, e.g. the question of whether cost-of-living adjustments should continue to be made to the basic wage.

Basic Wage Conference: The absence of provision for a common rule in the *Wages Boards Act* was a major difficulty when, in consequence of the abandonment of automatic adjustments by the Commonwealth Court, in October 1953,

the evolution of a common policy towards the basic wage became a question of urgency if the economy were to retain stability. While no visible "dispute" existed, it was apparent that unless a speedy consensus could be obtained of the views of the sector of the economy affected by Wages Boards' decisions, a situation of the utmost confusion might soon result. The solution was found by invoking Section 77 and convening a compulsory conference of a selected group of representatives of primary, secondary and service industries in the State, and an equal number of leaders of the principal trade union organisations. The gathering was chaired by the Chairman of Wages Boards.

Presidential Views: The purpose of this conference and of others which succeeded it in later years was to enable the Chairman "to inform his mind" on contentious industrial matters which would later come before him as Chairman of each separate Board. By allowing extended opportunity for the major spokesmen of both management and labour to state their views, the president was able to draw certain conclusions at the end of the conference. His conclusions amounted to an expression of intention to recommend and cast his vote in a particular way at subsequent Board meetings which would consider the issue. While this statement of the president's views had no legal binding effect upon either the participants in the conference or the Board members when they met, it was indicative of the way in which most Boards would eventually move, and this machinery has generally given a degree of stability which might seem belied by the autonomous character of the Boards.

Such conferences have been resorted to over basic wage issues. They have also been convened in connection with general margin claims, and the claim for an additional week of annual-leave. The procedure, which has by now become customary, is for the first formal presentation of a general industrial proposition to be made at a meeting of a particular Wages Board, the Electrical Engineers Board having been selected for basic wage and margins claims. Immediately the outline of the case has been stated, the Chairman adjourns the Board meeting, and the compulsory conference ensues, perhaps proceeding through several days, with the representative members of the "test" Board also present and competent to address the Chair. Following the president's statement of his "informed" opinion, the conference is closed and the Board resumes its formal session, to vote upon the matter of moment lately considered in the wider forum.

Savage River Iron Ore Dispute: In December, 1965, a compulsory conference was called to settle a dispute that was affecting recruitment of labour for the Savage River iron ore scheme. The contractors, as employers, had negotiated an agreement with the Australian Workers Union, an organisation not affiliated with the A.C.T.U. The dispute arose because other unions, affiliated with the A.C.T.U., wished to negotiate independently for their members, in accordance with normal Tasmanian industrial practice. Agreement was reached without the President being required to make a ruling.

The Tasmanian Public Service Tribunal

Establishment: The *Public Service Tribunal Act* 1958, together with various Orders-in-Council and Regulations made thereunder came into operation on 1st December, 1959, and by this Act provision was made for the setting up of a single wage-fixing authority for the employees of government and semi-government instrumentalities.

Function: Briefly, the Act provides for the establishment of the Public Service Tribunal, and vests in it the power and functions of making principal awards for the purpose of determining the salaries and specified conditions

of service of employees in the Public Service, and in addition, employees in the teaching service, the police force, public hospitals, and in various statutory authorities and State instrumentalities as prescribed. These functions include the making of determinations in respect of hours of work, qualifications required for advancement to higher grades, and rates of relieving, travelling, mileage, proficiency, lodging and meal allowances.

Members: The Tribunal is composed of a full-time chairman, and four part-time members, one being the Government nominee, and the others being the elected representatives of the police force, the teaching service and the general service respectively. For each hearing the Tribunal consists of the Chairman, the Government nominee, and the appropriate elected member, according to the group affected by the claim being heard.

"Authorities" and "Organisations": The Act provides for employer authorities and for the formation of employee organisations, known respectively as "Controlling Authorities" and "Service Organisations". These, together with the Chief Secretary as Minister administering the Act on behalf of the Government, constitute the parties entitled to be represented and appear before the Tribunal in its proceedings. At present, there are six controlling authorities prescribed, and twenty-three service organisations registered under the Act, and since the individual employee has no right to instigate proceedings, all approaches to the Tribunal must be through his controlling authority or service organisation.

Lodging of Claims: Awards of the Tribunal are current for a statutory period of three years, and thereafter continue in force until revoked by a subsequent principal award. However, claims to amend an award may be made within this term on the several grounds prescribed by the Act, which include the correction of defects or anomalies, and variations in the basic wage or in awards of wage-fixing authorities in other States. In this way, a considerable degree of flexibility is introduced and parties are allowed access to the Tribunal in the event of changed circumstances during the term of an award.

Obligation Imposed on Tribunal: In the exercise of its functions, the Tribunal is required to have regard to:

- (a) the necessity for promoting the efficiency of employees in the Public Service;
- (b) the latest awards and orders of the Commonwealth Industrial Court or of the Commonwealth Conciliation and Arbitration Commission prescribing standard rates of salaries for skilled, semi-skilled, and unskilled workers;
- (c) the rates of remuneration, direct and indirect, and the working conditions generally, prevailing in industry;
- (d) any changes in the cost of living; and
- (e) any award, order, or decision of an industrial court, court of arbitration, board, or other authority constituted under a law of any State or Territory of the Commonwealth that the Tribunal considers relevant, being an award, order, or decision that fixes, determines, or varies the salaries or scales of salaries payable to officers of the Public Service of that State or Territory or to any class or section of those officers.

It must act, in all proceedings, according to equity, good conscience, and the substantial merits of the case, without regard to technicalities or legal forms, and is not bound by any rules of evidence, but may inform its mind on any matter in such manner as it thinks fit.

Classification: In making awards, the Tribunal is empowered to determine, *inter alia*, "... scales of salaries for grades, divisions and occupational groups of employees, and for sub-divisions of those grades, divisions and occupational groups", but the power to classify employees within these scales remains with the controlling authorities. Within two months of such a classification being made, a service organisation, any member of which is affected thereby, may apply to the Tribunal to have the classification varied or disallowed, and in dealing with such an application, the Tribunal may, if it so determines, classify or grade the holder of an individual position within the terms of the appropriate award. It has no power, except where a new position is created, or where an appeal against a classification by a controlling authority is upheld, to determine the salary to be paid the holder of a particular office, or to make a classification or grading in respect thereof.

Jurisdiction: Tribunal awards are binding on the Crown, on every controlling authority and service organisation, and on every employee whom they purport to affect, and are not subject to challenge or review before any Court or in any legal proceedings. However, they have no application in respect of certain classes of employee, specifically exempted from Tribunal jurisdiction. The major exclusion relates to persons whose salaries and conditions of service are prescribed in an order or award under the *Commonwealth Conciliation and Arbitration Act*.

Chapter 11

FINANCE

PUBLIC FINANCE

Commonwealth and State

Change in Relationship

Before Tasmania became an original State of the Commonwealth, the responsibility for raising revenue and borrowing loan moneys had rested with the Tasmanian Government. Due to developments since Federation, the present reality is that Tasmania, in common with other Australian States, has limited ability to raise the money required for revenue and capital purposes; the Commonwealth Government, in the same period, has become almost the exclusive channel for loan funds for State purposes, and supplements State revenue by massive grants from its own funds. The emergence of the Commonwealth as the dominating influence in the financial transactions of the State Governments can be traced to three events:

- (1) under the Constitution, the States surrendered the right to levy customs and excise duties, such revenue sources passing exclusively to the Commonwealth;
- (2) under the *Financial Agreement Act 1927*, the Commonwealth became the borrowing agent for the States;
- (3) during World War II, under the Uniform Tax Scheme, the Commonwealth became the sole authority levying taxes upon the income of persons and companies—a war-time measure which has continued to this day.

The result of these changed relationships can be summarised as follows:
(i) the Commonwealth Government, as the channel for loan funds for State purposes, exercises a substantial degree of control over public investment;
(ii) to carry out functions for which their revenue is entirely inadequate, the States have become heavily dependent on the Commonwealth Government for general and specific grants; the Commonwealth Government is therefore placed in a position to exercise a substantial degree of control over the ordinary public expenditure of the States.

Principal Activities of the States

The Federal Constitution lists the matters regarding which the Commonwealth Parliament has power to legislate. Some of these powers are given exclusively to the Commonwealth (e.g. defence, customs and excise) but, in many matters, the Commonwealth and State Governments have concurrent powers, Commonwealth law prevailing where there is conflict. Matters other than those listed in the Constitution remain the concern of the States. Principal government activity at State level embraces education, health and welfare services, the development of internal resources, land settlement, soil conservation, maintenance of law and order and the provision of public utility

services such as roads, electricity, public transport and water supply. Such activities are either undertaken by State Departments or by statutory and local government bodies created under State legislation. The most obvious form of revenue for the discharge of these functions is State taxation but the Commonwealth exercises a practical monopoly over the more lucrative tax sources (e.g. customs and excise, income tax, sales tax, pay-roll tax, &c.). A responsibility therefore rests on the Commonwealth to supplement State revenues and the principal forms of assistance are described in the sections that follow.

Financial Assistance Grants

The (Federal) *States Grants (Income Tax Reimbursement) Act* 1942 provided for grants to the States as compensation for vacating the field of income tax. Similar grants, referred to as Tax Reimbursement Grants, continued until 1958-59 but the passage of the (Federal) *States Grants Act* 1959 resulted in a new formula for calculation of the grant. The essential features of the formula are as follows:

- (1) The base year grant (1959-60) for Tasmania was fixed at \$21,826,000.
- (2) The grant for the following year (1960-61) was calculated by applying three factors to the base year grant: (i) percentage increase in State population, 1959-60; (ii) percentage variation in Australian average wages per person employed, 1959-60; (iii) a constant betterment factor of 1.1 applied to the percentage wage variation.
- (3) The grant for 1960-61 so calculated then became the base for calculating the 1961-62 grant, population and wage variations in 1960-61 supplying the necessary data.

The calculation of the Tasmanian grant for 1962-63 illustrates the application of the formula: (i) grant (1961-62), \$25,477,238; (ii) percentage increase in Tasmanian population (1961-62), 1.88535; (iii) percentage increase in average wages per Australian employed (1961-62), 2.3063121; (iv) betterment factor, 1.1.

$$\begin{aligned} \text{Calculated Grant (1962-63)} &= \\ & \$25,477,238 \times 1.0188535 \times \frac{100 + (2.3063121 \times 1.1)}{100} \\ &= \$26,616,104 \end{aligned}$$

The 1962-63 grant (\$26,616,104) becomes the base for calculating the 1963-64 grant.

The following shows the amounts received as Financial Assistance Grants since 1948-49:

Financial Assistance Grants (a)—Receipts by Tasmania
\$

Year	Amount	Year	Amount	Year	Amount
	\$		\$		\$
1948-49 ..	3,334,042	1954-55 ..	10,152,662	1960-61 ..	23,960,360
1949-50 ..	4,445,148	1955-56 ..	10,704,450	1961-62 (b) ..	25,671,238
1950-51 ..	5,217,170	1956-57 ..	12,048,712	1962-63 ..	26,616,104
1951-52 ..	7,999,974	1957-58 ..	13,435,384	1963-64 ..	27,626,296
1952-53 ..	9,069,516	1958-59 ..	14,539,428	1964-65 ..	29,297,286
1953-54 ..	9,663,204	1959-60 ..	21,826,000		

(a) Tax Reimbursement Grants from 1942-43 to 1958-59. (Formula grants plus supplementary grants.)

(b) Includes upward amendment of \$194,000 resulting from population census adjustments. Nevertheless the original calculated figure—\$25,477,238—was the base from which the 1962-63 grant was calculated.

Uniform Income Taxation

The question remains—if the exclusive right to levy income taxes was merely a war-time measure, why has the practice continued to this day? As late as August, 1953, a Premiers' Conference discussed a report on the extent to which the Commonwealth might vacate the income tax field but no agreement could be reached. In December, 1955, the Victorian Government took out a writ in the High Court challenging the validity of the uniform tax legislation. In particular, Victoria disputed: (i) the power of the Commonwealth to make tax reimbursement grants conditional upon the States' not levying income tax; (ii) the Commonwealth's power to provide an absolute priority for payment of Commonwealth income tax over income taxes levied by the States. In November, 1956, the New South Wales Government intervened to support Victoria's challenge.

In August, 1957, the High Court ruled: (i) unanimously, that the condition attaching to the tax reimbursement grants, that the State should not levy income tax, was valid; (ii) by four to three, that the prohibition against a taxpayer paying State income tax until Commonwealth income tax was paid, was invalid. This meant that any State wishing to levy income tax would be obliged to negotiate a special agreement with the Commonwealth; to tax on incomes without such agreement would place the State's tax reimbursement grant in jeopardy. To date, no special agreement has been negotiated by any State.

In bringing down his budget in 1964, the Victorian Premier announced his intention of re-introducing State income tax. The essentials of his proposals were:

- (1) an agreement would be negotiated with the Commonwealth so that the existing Commonwealth machinery for assessment and collection could be used;
- (2) if such agreement could be obtained, Victorians would pay an extra 1d. in the £ (0.4167 cents in the \$) over and above the rates of personal income tax collected by the Commonwealth.

In November, 1964, this request for the use of Commonwealth facilities was rejected by Federal Cabinet and the Victorian Government abandoned the proposal, stating the following grounds:

- (1) it would be very expensive for the State to set up its own machinery for the assessment and collection of income tax;
- (2) it would be very inconvenient for the Victorian taxpayer to have to fill in two income tax returns and to deal with two authorities.

The acceptance of the Victorian Government's proposals by the Federal Cabinet would have been a cause for concern to the Tasmanian Government. As a claimant State in the matter of Special Grants, Tasmania is compelled to follow, in some degree, the taxation procedures of the Standard States (Victoria and N.S.W.).

Special Grants (Section 96 of the Constitution)

Section 96 of the Constitution reads: "During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit". Prior to 1933, financial assistance of varying amounts was granted by the Commonwealth to South Australia (from 1929-30), Western Australia (from 1910-11) and Tasmania (from 1912-13). There was no set method of arriving at the grant although on some occasions the applications for assistance were examined by the Public Accounts Committee of the Federal Parliament.

The Commonwealth Grants Commission was established in 1933 and consists of three members on a part-time basis assisted by a full-time staff. Initially, the Commission considered "compensation for disabilities arising from federation" as a possible basis for its recommendations. In its Third Report (1936) it fixed upon the principle of financial need, which was expressed in the following terms: "Special grants are justified when a State through financial stress from any cause is unable efficiently to discharge its functions as a member of the federation and should be determined by the amount of help found necessary to make it possible for that State by reasonable effort to function at a standard not appreciably below that of other States". In arriving at its recommendations, the Commission each year makes a detailed comparison of the budget results of the claimant States with those of the non-claimant States.

Prior to the passage of the (Federal) *States Grants Act* 1959, the claimant States had been Tasmania, W.A. and S.A., so the Commission had used the budgetary experience of the non-claimant States (N.S.W., Victoria and Queensland) as the basis for comparison. The new formula evolved under the *States Grants Act* 1959 had been devised partly in reaction to a claim by Victoria and Queensland to be also considered as claimant States; in effect, the new scale of increased grants under this legislation resulted in the number of claimant States falling to two, W.A. and Tasmania. The Grants Commission could then have used the accounts of the four non-claimant States to reach a basis for comparison; it finally decided to adopt a two-State standard, based on the budgets of N.S.W. and Victoria. The following table shows Tasmanian receipts since 1947-48:

Special Grant (Section 96)—Receipts by Tasmania
(\$'000)

Year	Preliminary Grant	Adjustment Assessed (a)	Adjustment Applied (b)	Actual Receipt (c)
1947-48 ..	1,494	+ 524	..	1,494
1948-49 ..	2,000	— 192	..	2,000
1949-50 ..	2,000	+ 252	+ 524	2,524
1950-51 ..	2,200	..	— 192	2,008
1951-52 ..	1,500	— 300	+ 252	1,752
1952-53 ..	3,100	— 1,200	..	3,100
1953-54 ..	3,300	— 368	— 300	3,000
1954-55 ..	6,400	— 314	— 1,200	5,200
1955-56 ..	8,768	— 1,632	— 368	8,400
1956-57 ..	7,314	— 28	— 314	7,000
1957-58 ..	8,932	+ 1,606	— 1,632	7,300
1958-59 ..	8,828	+ 1,818	— 28	8,800
1959-60 ..	5,194	+ 1,950	+ 1,606	6,800
1960-61 ..	6,800	+ 282	+ 1,818	8,618
1961-62 ..	8,200	+ 556	+ 1,950	10,150
1962-63 ..	9,800	+ 982	+ 282	10,082
1963-64 ..	10,200	..	+ 556	10,756
1964-65 ..	13,618	..	+ 982	14,600

(a) The assessment is shown against the actual year for which accounts have been examined by the Grants Commission, although its effect does not become apparent until two years later.

(b) The two-year delay in application is due to the Grants Commission's obligation to perform a minute analysis of the accounts of claimant and non-claimant States before announcing the adjustments.

(c) "Preliminary grant" plus or minus the "adjustment applied".

Since 1949-50, the Special Grant has been in two parts. One part is in the nature of a preliminary grant to meet the estimated financial needs of the State during the current financial year. The other part is an adjustment (positive or negative), the magnitude of which will depend on whether the preliminary grant made two years earlier proved greater or less than the amount of financial assistance deemed justified by the Grants Commission. The Special Grant for 1963-64 was \$10,200,000 subject to a positive adjustment of \$556,000 on 1961-62 accounts.

The positive adjustment of \$556,000 applied in 1963-64 meant that the Grants Commission considered its 1961-62 preliminary grant too low in the light of its critical examination, not only of the 1961-62 accounts of Tasmania, but also those of the Standard States (N.S.W. and Victoria). The accounting principles followed by the Grants Commission are necessarily complicated and can be examined in the Annual Reports of that authority. It is sufficient to say that the existence of the Special Grant has exercised considerable influence on the financial policy of successive Tasmanian Governments. Two principles employed by the Grants Commission will serve to illustrate the nature of this influence:

- (1) if State taxation in a claimant State is below average rates and average exemption scales in the Standard States, an unfavourable adjustment will result;
- (2) if State social service expenditure in a claimant State is above comparable per-capita expenditure in the Standard States (after allowing for certain difficulties encountered in the claimant State), an unfavourable adjustment will result.

The essence of the matter is that claimant States must endeavour to raise revenue from taxation at least at the rates and exemption scales adopted by the Standard States and must not exceed the per capita expenditure of the Standard States in certain fields. Departure from these standards can result in adverse Grant adjustments.

The treatment of Special Grant adjustments in Tasmanian accounts is as follows:

- (1) if a favourable adjustment is made, an equal amount is paid into a suspense account (Accumulated Revenue Account) and the Consolidated Revenue Fund receives only the preliminary grant;
- (2) if an unfavourable adjustment is made, an equal amount is transferred from the suspense account (Accumulated Revenue Account) to the Consolidated Revenue Fund. Thus the Consolidated Revenue Fund again shows as a receipt the amount of the preliminary grant and not, as might be expected, the preliminary grant *less* the unfavourable adjustment.

In effect, the State Treasury carries forward in the Accumulated Revenue Account unadjusted budget surpluses and deficits until the Grants Commission announces a favourable or unfavourable adjustment; action can then be taken to charge the net adjusted deficit against the Loan Fund.

Employment Stimulation Grants

The Commonwealth made available to the Tasmanian Government the following amounts: 1961-62, \$1,980,000; 1962-63, \$3,040,000. The funds were provided for expenditure "by the State at its discretion on employment-giving activities". The first grant in 1961-62 was taken to the credit of the

Consolidated Revenue Fund but, in 1962-63, the second grant was taken to the credit of a State Trust Fund (Commonwealth Grant Employment Suspense Account).

The disposal of the 1963-64 Tasmanian Employment Stimulation Grant (\$2,816,000) illustrates the influence of the Australian Grants Commission on the financial practices of the claimant States. Originally it was intended to credit the whole amount to the State Trust Funds as in 1962-63. Subsequently it was learned that the Standard States (N.S.W. and Victoria) were taking the whole of their employment grants in aid of Consolidated Revenue, thus reducing their deficits. The Grants Commission, after hearing submissions from the Commonwealth Treasury, then informed the claimant States (Tasmania and W.A.) that if they incurred substantial deficits through failure to take an appropriate amount of their Employment Grants into Consolidated Revenue, an adjustment would be made to the Special Grant when the accounts for 1963-64 were reviewed by the Commission.

Two contrary points of view existed: (i) the standard States claimed that, by reducing their revenue deficits, they were reducing the drain on loan moneys for the funding of deficits; (ii) the claimant States argued that passing the Employment Grant into their Consolidated Revenue Funds would slow down, and even prevent, the application of all the grant to employment stimulating purposes; further, that the accounting principles of the Grants Commission could well result in portion of the effect of the Employment Grant being lost by a reduction in the Special Grant. To comply with the view of the Grants Commission, the Tasmanian Treasurer then allocated \$900,000 to Consolidated Revenue and the balance (\$1,916,000) to State Trust Funds.

Payments Under the Financial Agreement (1927)

Under the Financial Agreement which was entered into by the Commonwealth and the States in 1927, the Commonwealth contributes towards interest and sinking fund payments in respect of States' debts existing at 30th June, 1927, and towards sinking fund payments in respect of States' debts incurred after that date for purposes other than the funding of revenue deficits.

The Commonwealth contribution towards payment of interest on the Tasmanian State debt is a constant annual sum of \$533,718 and will be continued until 1985.

The sinking fund contributions made by the Commonwealth under the Agreement in respect of States' debts vary according to the date and nature of the borrowings. On States' debts existing at 30th June, 1927, the Commonwealth is making sinking fund contributions at the rate of \$0.25 per cent per annum until 1985 and in respect of cash loans raised for the States since that date, the Commonwealth makes sinking fund payments for 53 years at the rate of \$0.50 per cent per annum. Each State is obliged to make sinking fund payments for corresponding periods at the rate of \$0.50 per cent per annum of its debt, regardless of the date on which the debt was incurred. The only exception is in relation to debt incurred for the purpose of funding revenue deficits. In these instances, the Commonwealth makes no sinking fund contributions and the States are obliged to make contributions to the sinking fund of not less than four per cent per annum. However, in respect of Treasury Bills issued to cover State revenue deficits accruing between July, 1927 and June, 1935, special arrangements were made under which the Commonwealth contributes \$0.50 per cent per annum until June, 1983, on the amount outstanding.

Recent Commonwealth sinking fund contributions in respect of the Tasmanian public debt are as follows: 1953-54, \$396,874; 1954-55, \$479,234; 1955-56, \$540,572; 1956-57, \$593,684; 1957-58, \$654,010; 1958-59, \$699,718; 1959-60, \$776,022; 1960-61, \$828,754; 1961-62, \$896,130; 1962-63, \$971,608; 1963-64, \$1,061,736; 1964-65, \$1,129,472.

The acceptance of some Commonwealth liability for interest and sinking fund payments on States' debts was only one part of a more extensive agreement setting up an Australian Loan Council and a National Debt Sinking Fund. The raising of loan money for the States under the Agreement is described later in this chapter.

Commonwealth Aid for Roads

The *Main Roads Development Act* 1923 provided for annual Commonwealth contributions to the States, the basis of distribution being a formula weighted 40 per cent according to State area and 60 per cent according to State population. This basis was explicitly expressed in the *Federal Aid Roads Act* 1926 and continued to operate until 1959-60. Later legislation defined the amount to be provided by the Commonwealth in terms of a stated yield from petrol tax, (e.g. the *Federal Aid Roads Act* 1931 determined the total contribution as 2.08 cents (2½d.) and 1.25 cents (1½d.) per gallon of petrol cleared for Customs duty and Excise duty purposes, respectively).

A new formula for distribution was embodied in the *Commonwealth Aid Roads Act* 1959 when the Commonwealth undertook to provide a total sum of \$500,000,000 over a five year period. Of this amount, \$440,000,000 represented basic grants, and the remaining sum of up to \$60,000,000 was subject to certain annual limits, payable to the States on the basis of \$1 for each \$1 allocated by the State Governments from their own resources for expenditure on roads over and above the amounts allocated by them for roads expenditure in 1958-59.

The amounts being made available by the Commonwealth were distributed between the States in each year in the proportion of five per cent of the total for Tasmania, and the balance shared between the other five States on the basis of one third according to Census population, one third according to area and one third according to vehicles registered at 31st December preceding the year concerned. It will be observed that Tasmania, with less than one per cent of the area of the Commonwealth, was specifically exempted from the operation of the formula applied to the other States.

The *Commonwealth Aid Roads Act* 1964 contained provision for a second five-year plan based on a total distribution over this period of \$750,000,000.

Details of Tasmanian receipts of Commonwealth contributions in respect of road expenditure are shown in the following table:

Commonwealth Aid for Roads—Receipts by Tasmania
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1948-49 ..	710	1954-55 ..	2,334	1960-61 ..	4,600
1949-50 ..	876	1955-56 ..	2,652	1961-62 ..	5,000
1950-51 ..	1,356	1956-57 ..	3,126	1962-63 ..	5,400
1951-52 ..	1,466	1957-58 ..	3,466	1963-64 ..	5,800
1952-53 ..	1,510	1958-59 ..	3,624	1964-65 ..	6,500
1953-54 ..	1,646	1959-60 ..	(a) 4,366		

(a) Payment under the *Commonwealth Aid Roads Act* was \$4,200,000 and the balance represents a final adjustment of Commonwealth commitments under previous legislation.

Summary of Commonwealth Payments

In the previous sections, the main forms of Commonwealth assistance have been described; the following table shows the total payments to Tasmania from the Commonwealth Consolidated Revenue Fund:

Commonwealth Consolidated Revenue Fund—Payments To or For The State of Tasmania
(£'000)

Item	1962-63	1963-64	1964-65
Financial Assistance Grants	26,616	27,626	29,298
Special Grants (Section 96)	10,082	10,756	14,600
Employment Stimulation Grants	3,040	2,816	..
Financial Agreement Payments—			
Interest on State Debts	534	534	534
Sinking Fund on State Debts	972	1,062	1,130
Grant to University (Capital and Maintenance) ..	1,018	1,056	1,342
Coal Mining Industry—Long Service Leave ..	8	6	4
Dairy Industry Extension Service	18	38	38
Expansion, Agricultural Advisory Services ..	36	32	36
Commonwealth Aid for Roads	5,400	5,800	6,500
Tuberculosis Hospitals—Maintenance Grant ..	364	362	362
Tuberculosis Hospitals—Capital Grant ..	10	40	6
Gordon River Road .. .. .	..	270	1,094
Miscellaneous .. .. .	..	22	(a) 884
Total (b)	48,098	50,420	55,828

(a) Items include science laboratories, \$332,000; technical training, \$334,000; mental health institutions, \$198,000.

(b) This total cannot be identified as such in State accounts since part is taken into Consolidated Revenue, part into Loan Fund, and the balance into Trust and Special Funds.

Financial Agreement Between Commonwealth and States

The original Financial Agreement was made on 12th December, 1927, but Tasmania did not become a party to it until 1st July, 1928. The basic intention of the agreement was a co-ordinated approach to the loan market, the establishment of sound sinking fund arrangements and the sharing of State debt charges by the Commonwealth. The main provisions are summarised as follows:

- (1) The Commonwealth assumed certain liabilities in respect of the States' debts (see previous section on interest and sinking fund payments made by the Commonwealth in respect of Tasmanian State Debt—"Payments under the Financial Agreement").
- (2) The Australian Loan Council was set up to co-ordinate the public borrowings of the Commonwealth and the States. It consists of the Prime Minister (or his nominee) as Chairman, and the State Premiers (or their nominees). Each financial year, the Commonwealth and the States submit, to the Loan Council, programmes setting out the amounts they desire to raise by loan during the next year. Revenue deficits to be funded are included in the borrowing programmes but borrowing by the Commonwealth for defence purposes is excluded from the terms of the agreement.

If the Loan Council decides that the total amount of the loan programmes for the year cannot be borrowed at reasonable rates and conditions, it then decides the amount which shall be borrowed and may, by unanimous decision, allocate that amount between the Commonwealth and the States. In default of a unanimous decision, the Commonwealth is entitled to one-fifth of the total

amount to be borrowed and each State to a proportion of the remainder equal to the ratio of its net loan expenditure in the preceding five years to the net loan expenditure of all States during the same period.

Subject to the decisions of the Loan Council, the Commonwealth arranges all borrowings, including those for conversions, renewals and redemptions. However, the Commonwealth or a State may borrow for "temporary purposes" by way of overdraft or fixed deposit, subject to limits fixed by the Loan Council. In addition, the Commonwealth may borrow within the Commonwealth, or a State within its own territory, from authorities, bodies, institutions, or from the public by counter sales of securities, subject to Loan Council approval. Commonwealth securities are issued for money borrowed in this way and amounts so borrowed are treated as part of the borrowing programme for the year.

- (3) The Agreement involved setting up a National Debt Commission to administer one consolidated sinking fund in respect of the debt of the Commonwealth and the States. Sinking fund moneys are used to redeem unconverted securities at maturity, and to re-purchase securities on the stock market.
- (4) It was realised at the inception of the Loan Council that, in the interests of co-ordinated borrowing, the Council should be advised of borrowings of large amounts by semi-governmental authorities (such loan raisings do not form part of State or Commonwealth debt and therefore are not within the scope of the original agreement). A set of rules evolved in 1936 is regarded as the "Gentlemen's Agreement" and makes provision for the submission to the Council of annual loan programmes in respect of semi-governmental authorities (in conjunction with the loan programmes of the Governments concerned) and for the fixing of the terms of individual semi-governmental loans coming within the scope of the annual programme. (For 1964-65, borrowings approved by the Loan Council for Tasmanian semi-government and local government authorities amounted to \$9,852,000.)

In 1951-52 the Commonwealth, for the first time, provided assistance from its own resources to supplement the amounts raised on the market for the State Governments. It was clear that the amount of the approved Loan Council programme for that year could not be borrowed on reasonable terms and conditions, and the Commonwealth therefore offered to provide special assistance from its own resources to enable the borrowing programme to be completed. Similar assistance has been provided in subsequent years, the proportion of Commonwealth assistance to the total programme rising as high as 69 per cent in 1952-53. The main source of Commonwealth assistance has been the Australian currency proceeds of overseas loans and, more important, budget surpluses; funds have been made available through the issue of special loans subscribed to by the Commonwealth at the end of each financial year, on terms and conditions similar to those prevailing for public loans raised by the Commonwealth.

Money made available from the Commonwealth Loan Fund to the State of Tasmania is recorded in two State funds, namely:

- (i) the Loan Fund, to which are paid the receipts of new cash borrowings but not allocations under the Commonwealth and State Housing Agreement;
- (ii) the Trust and Special Funds, to which are paid the allocations for housing made under the Agreement.

The following table shows Loan Council borrowing programmes undertaken on behalf of the State of Tasmania:

Tasmania—New Cash Borrowings Authorised by Australian Loan Council (a)
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1948-49 ..	7,794	1954-55 ..	25,920	1960-61 ..	28,388
1949-50 ..	10,718	1955-56 ..	26,800	1961-62 ..	28,996
1950-51 ..	29,382	1956-57 ..	22,800	1962-63 ..	30,708
1951-52 ..	30,200	1957-58 ..	24,200	1963-64 ..	32,020
1952-53 ..	26,124	1958-59 ..	25,180	1964-65 ..	34,136
1953-54 ..	28,900	1959-60 ..	27,080		

(a) For State works programmes; amounts credited to State Loan Fund.

The above table does not include allocations under the Commonwealth and State Housing Agreements, such borrowings being also part of the Loan Council's programme. The following table shows allocations to Tasmania for housing purposes:

Tasmania—Allocations Under Commonwealth and State Housing Agreements (a)
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1948-49 ..	900	1954-55 ..	(b)	1960-61 ..	4,000
1949-50 ..	2,200	1955-56 ..	(b)	1961-62 ..	5,856
1950-51 ..	200	1956-57 ..	4,000	1962-63 ..	5,200
1951-52 ..	(b)	1957-58 ..	4,000	1963-64 ..	6,000
1952-53 ..	(b)	1958-59 ..	4,400	1964-65 ..	6,400
1953-54 ..	(b)	1959-60 ..	3,900		

(a) For housing; credited to State Trust Funds.

(b) Tasmania withdrew from the Commonwealth and State Housing Agreement in 1950-51 and repaid all principal owing out of loan money allocated by the Loan Council to the State in that year. Tasmania's housing requirements in this period were financed from the State Loan Fund.

The following table combines borrowings for the State's works programme and for the housing programme:

Tasmania—Total Borrowings for Works and Housing Programmes
(\$'000)

Year	Amount	Year	Amount	Year	Amount
1948-49 ..	8,694	1954-55 ..	25,920	1960-61 ..	32,388
1949-50 ..	12,918	1955-56 ..	26,800	1961-62 ..	34,852
1950-51 ..	29,582	1956-57 ..	26,800	1962-63 ..	35,908
1951-52 ..	30,200	1957-58 ..	28,200	1963-64 ..	38,020
1952-53 ..	26,124	1958-59 ..	29,580	1964-65 ..	40,536
1953-54 ..	28,900	1959-60 ..	30,980		

Tasmanian Public Account

The State Public Account includes the Consolidated Revenue Fund, the Trust and Special Funds, and the Loan Fund. Ordinary revenues from taxation and other sources are paid into the Consolidated Revenue Fund from

which the main expenditures are for public debt charges, education, development of State resources, health and hospitals, general administration, subsidies to State business undertakings, law and order, and certain welfare activities. The Trust and Special Funds cover special transactions outside the ordinary operations of departmental expenditure, such as funds from the Commonwealth for specific purposes and moneys held for expenditure by the State at some future time. The Loan Fund receives its funds from public borrowings and the main expenditure is on State public works and on advances to State business undertakings.

A summary of transactions on the Tasmanian Public Account for a three-year period is given in the following table:

Public Account—Summary of Transactions
(\$'000)

Particulars	1961-62	1962-63	1963-64
Cash and Investments, Beginning of Year	4,130	6,216	5,292
Receipts—			
Consolidated Revenue Fund ..	60,636	63,036	67,836
Special Grant Adjustment ..	1,950	282	556
Loan Raisings	29,072	30,824	32,150
Other Payments to Loan Fund ..	2,432	2,822	2,448
Net Increase, Trust and Special Funds	1,756	— 654	520
Capital Appreciation on Bond Redemption .. .. .	..		4
Total	95,846	96,312	103,514
Expenditure—			
Consolidated Revenue Fund ..	61,352	64,020	69,020
Loan Fund—Public Works and Purposes	32,332	33,100	35,062
Discount	76	116	130
Total	93,760	97,236	104,212
Cash and Investments, End of Year ..	6,216	5,292	4,594

In the following table are shown the balances credited to each fund constituting the Public Account and the form in which the balances are held:

Public Account—Summary of Balances
(\$'000)

As at 30th June	Balance				Location			
	Accumulated Revenue Account	Loan Fund	Trust and Special Funds	Total	Cash in Treasury or Bank	Advanced to Departments	Govt. and Other Securities (a)	Total
1961..	Dr. 2,458	4,058	2,530	4,130	2,268	706	1,156	4,130
1962..	Dr. 1,112	3,042	4,286	6,216	4,298	724	1,194	6,216
1963..	Dr. 1,700	3,360	3,632	5,292	3,598	728	966	5,292
1964..	Dr. 2,168	2,610	4,152	4,594	3,132	730	732	4,594

(a) Includes fixed deposits.

In the previous table, the "Accumulated Revenue Account" is a suspense account recording accumulated surpluses and deficits in the Consolidated Revenue Fund and also the funding of deficits. Details of the account are as follows:

Accumulated Revenue Account—Summary of Transactions
(\\$'000)

Year	Opening Balance	Transactions			Closing Balance
		Budget Result, Consolidated Revenue	Special Grant Adjustment (a)	Deficits Charged to Loan Fund	
1960-61	Dr. 3,880	— 394	+ 1,818		Dr. 2,458
1961-62	Dr. 2,458	— 716	+ 1,950	+ 114	Dr. 1,112
1962-63	Dr. 1,112	— 984	+ 282	+ 112	Dr. 1,700
1963-64	Dr. 1,700	— 1,184	+ 556	+ 160	Dr. 2,168

Note—Figures have been rounded to nearest \$'000 without adjustment to add to totals.

(a) It is Tasmanian Treasury practice to record Special Grant adjustments in the Accumulated Revenue Account and to include, in published Consolidated Revenue receipts, only the preliminary grant. Since the adjustment may be favourable (+) or unfavourable (—), Consolidated Revenue receipts are actually diminished or augmented by the amount of the adjustment.

In the following section dealing with Consolidated Revenue, Treasury practice has been followed in eliminating Special Grant adjustments from Consolidated Revenue total receipts.

Consolidated Revenue Fund

General

The financial transactions of the State of Tasmania are recorded under (a) Consolidated Revenue, (b) Trust Funds, and (c) Loan Fund.

Payments from Consolidated Revenue are made only on the basis of authority found in: (i) the annual Appropriation Act of the Parliament; (ii) Acts of the Parliament made in previous years and under which certain annual payments are classified as "reserved by law"; (iii) the *Public Account Act* 1957 (as amended in 1962) and the *Audit Act* 1918.

The third category of authority listed above is designed to give the Treasurer and the Government some flexibility in public expenditure since the Appropriation Act cannot be expected to anticipate, to the nearest dollar, the expenses that are likely to be incurred for each and every item. The relevant sections of the amended *Public Account Act* are 5A and 5B which provide that, in relation to Consolidated Revenue, the Treasurer may authorise transfers between votes within certain subdivisions of the appropriation and, on the authority of the Governor, supplement certain appropriations and provide funds to meet expenditure for which no other provision exists. Transfers, as described under 5A, are a matter for the Treasurer but additional expenditure, as described under 5B, needs ratification by Parliament before the close of the following financial year. Regulations 20 and 21 of the second schedule of the *Audit Act* provide for expenditure by the Treasurer to meet emergencies for which no vote exists; the Governor must first authorise such expenditure and the Auditor General investigate the circumstances before payment can be made.

Exclusions from Consolidated Revenue

It should be observed that the Consolidated Revenue Fund does not include the complete revenue and expenditure in respect of all activities undertaken or authorised by the State Government: (i) some moneys are paid

into State Trust Funds and some payments are made from such funds, e.g. the Commonwealth Aid Roads Grant is paid into the State Highway Trust Fund; (ii) the gross receipts and payments of a number of State business undertakings and State authorities are excluded from the Consolidated Revenue Fund, their relation to the fund being as follows:

- (a) In Tasmania, the railways (in common with Government shipping and road transport services) are administered by the Transport Commission and, since 1939-40, only the net losses of this authority have been paid from the Consolidated Revenue Fund to which is credited the Commission's annual payment of debt charges (interest and redemption) on advances made by the Government.
- (b) Omnibus services in Hobart, Launceston and Burnie are operated by the Metropolitan Transport Trust. The net annual loss of the authority is a charge against Consolidated Revenue which is credited with annual payment of debt charges made by the Trust on Government advances.
- (c) The gross receipts and expenditure of the Hydro-Electric Commission are excluded from the Consolidated Revenue Fund which is credited with annual payment of debt charges by the Commission. Net profit or loss on the Commission's activities is carried forward in the authority's own suspense account and has no effect on Consolidated Revenue.
- (d) Also excluded from the Consolidated Revenue Fund are the gross receipts and payments of: regional water supplies, Government Printing Office, Government Insurance Office, Public Trustee, State housing authorities, Closer Settlement, Rural Credits and other activities of the Agricultural Bank, &c.; in accordance with various Acts, it is usual for the net profits or losses of the previous year to be paid to or from the Consolidated Revenue Fund for the current year.

Consolidated Revenue Fund, Summary

The following table shows the Consolidated Revenue and Expenditure of Tasmania, the surplus and deficit, and the aggregate deficit at the end of each year:

Consolidated Revenue Fund—Surpluses and Deficits
(\$'000)

Year	Revenue			Expenditure	Budget Result		Aggregate Net Deficit at End of Year
	Before Adjustment	Special Grant Adjustment	After Adjustment		Before Adjustment	After Adjustment	
At 30.6.53							6,956
1953-54	26,870	— 368	26,502	26,840	+ 30	— 338	7,294
1954-55	30,190	— 314	29,876	30,614	— 424	— 738	8,032
1955-56	36,022	— 1,632	34,390	35,792	+ 230	— 1,402	9,434
1956-57	37,916	— 28	37,888	39,544	— 1,628	— 1,656	11,090
1957-58	41,604	+ 1,606	43,210	43,228	— 1,624	— 18	11,108
1958-59	43,702	+ 1,818	45,520	45,518	— 1,816	+ 2	11,106
1959-60	48,592	+ 1,950	50,542	50,656	— 2,064	— 114	11,220
1960-61	53,772	+ 282	54,054	54,166	— 394	— 112	11,332
1961-62	60,636	+ 556	61,192	61,352	— 716	— 160	11,492
1962-63	63,036	(a)	63,036	64,020	— 984	(a)	(a) 12,476
1963-64	67,836	(b)	67,836	69,020	— 1,184	(b)	(b) 13,660

(a) Adjustment will be taken into account in 1964-65.

(b) Adjustment will be taken into account in 1965-66.

Deficit Funding

In the previous table, the original budget result is treated as provisional because the Grant Commission's adjustment is used to amend the original surplus or deficit and also the aggregate deficit. The Tasmanian Government refrains from immediately charging revenue deficits against the Loan Fund since the precise amount of the final deficit is not known until the Commission's adjustment is taken into account two years later. The following illustrates the sequence in the funding of deficits:

		\$'000
(1) Aggregate deficit (unadjusted) at 30th June, 1962	..	12,048
Less Special Grant Adjustment, 1961-62 Accounts	..	556
Adjusted Aggregate Deficit at 30th June, 1962	.. ..	11,492
Unadjusted Deficits, 1962-63 and 1963-64	.. ..	2,168
Aggregate Deficit at 30th June, 1964 (unadjusted for 1962-63 and 1963-64)	.. ..	13,660
(2) Aggregate Revenue Deficits Funded at 30th June, 1963		11,332
Adjusted Revenue Deficit for 1961-62 Funded in 1963-64..		160
Aggregate Revenue Deficits Funded at 30th June, 1964	..	11,492
Carried Forward in Accumulated Revenue Account to 1964-65 (a)	.. ..	2,168
Aggregate Deficit at 30th June, 1964 (unadjusted for 1962-63 and 1963-64)	.. ..	13,660

- (a) The suspense account, Accumulated Revenue Account, is actually an Accumulated Deficit Account in which the accumulation of deficits is reduced by crediting the account with favourable Special Grant adjustments and by transferring liability to the Loan Fund (i.e. deficit funding). Revenue surpluses, when they occur, are paid to the account as an offset against accumulated deficits.

Consolidated Revenue—Receipts

The principal sources of revenue in this fund, in order of importance, are the grants and other financial assistance received from the Commonwealth Government; debt charges received from semi-government authorities in respect of State advances; and State taxation.

At this point, it should be noted that it is impossible to make valid comparisons between the unadjusted Consolidated Revenue Funds of the six Australian States due to differences in their recording of receipts. In some States, for example, the *gross* receipts of various business undertakings, e.g. railways, are taken into Consolidated Revenue but, in Tasmania, only the *net* losses of the Transport Commission are charged to the fund.

Other differences exist due to the form of control exercised over particular business undertakings. For example, three States show receipts from harbours in their Consolidated Revenue Funds but port control in Tasmania is vested in Marine Boards and therefore no receipts are recorded in the fund.

There are also differences in the treatment of Commonwealth grants, e.g. for universities. In Queensland and S.A., these university grants are recorded in Consolidated Revenue but not in the other four States (Tasmania passes such money through its Trust and Special Funds).

The following table shows Tasmanian Consolidated Revenue receipts for a three-year period:

Consolidated Revenue Fund—Receipts
(\$'000)

Item	1961-62	1962-63	1963-64
Commonwealth Grants—			
Financial Agreement	534	534	534
Financial Assistance	25,672	26,616	27,626
Special	10,150	10,082	10,756
Employment Stimulation	1,980	..	900
Total	38,336	37,232	39,816
Debt Charge Recoveries (a)—			
Interest	10,292	11,080	11,914
Sinking Fund	1,286	1,410	1,558
Total	11,578	12,490	13,472
State Taxation	8,694	9,228	10,066
Lands and Forests—			
Forestry	964	1,090	1,212
Other Rents, Sales, &c.	144	164	158
Total	1,108	1,254	1,370
Business Undertakings	224	162	236
Departmental Revenue, Fees, Rents, &c.	1,898	2,164	2,622
Victorian Lotteries Agreement	138	134	146
Commonwealth National Welfare Fund ..	610	654	664
Actual Receipts	62,586	63,318	68,392
Transfer, Accumulated Revenue Account(b)	— 1,950	— 282	— 556
Grand Total	60,636	63,036	67,836

(a) On advances made to semi-government bodies.

(b) Special Grant adjustments.

The relative importance of the various components of the Consolidated Revenue Fund can be assessed by expressing them on a per capita basis, using the State mean population for the relevant financial year:

Consolidated Revenue Fund—Receipts Per Head of Population
(\$)

Item	1961-62	1962-63	1963-64
Commonwealth Grants	107.48	102.82	108.73
Debt Charge Recoveries	32.46	34.50	36.80
State Taxation	24.38	25.48	27.49
Lands and Forests	3.10	3.46	3.74
Business Undertakings	0.62	0.46	0.64
Departmental Revenue, Fees, Rents, &c. .	5.32	5.96	7.16
Victorian Lotteries Agreement	0.38	0.38	0.40
Commonwealth National Welfare Fund ..	1.72	1.80	1.81
Transfer, Accumulated Revenue Account	— 5.46	— 0.78	— 1.52
Total	170.00	174.08	185.25

Debt Charge Recoveries

After Commonwealth Grants, debt charge recoveries is the next important item in Consolidated Revenue. The following table shows details of the payments of interest and sinking fund made by various authorities on advances which have been made to them by the State Government; since the advances have been made primarily from State loan borrowings, the Government has accepted an annual liability for debt charges (in respect of these authorities) approximately equal to the recoveries shown.

Debt Charge Recoveries—Consolidated Revenue Fund
(*\$'000*)

Source of Recovery	Interest			Sinking Fund Contributions		
	1961-62	1962-63	1963-64	1961-62	1962-63	1963-64
Transport Commission	900	882	893	132	136	140
Metropolitan Transport Trust ..	106	110	117	16	16	17
Hydro-Electric Commission ..	7,600	8,160	8,785	986	1,094	1,210
Regional Water Supplies ..	252	368	500	30	40	64
Government Printing Office ..	20	20	20	2	2	3
King Island Abattoirs	16	16	16	2	2	2
Tasmanian Grain Elevators ..	26	40	40	14	8	8
Aluminium Industry Agreement	58	98	106	..	..	..
Closer Settlement	16	30	56	..	..	..
Returned Soldiers Settlement ..	24	24		..	..	..
Homes Act Advances	84	80	69	..	..	..
Homes Construction (Housing Department)	864	858	861	104	112	114
State Advances, Primary Producers	100	114	129	..	..	..
Loans to Local Bodies	8	38	64	..	..	..
Tourist Accommodation Loans ..	44	50	51	..	..	..
Flood Relief Act, 1960	4	6	..	..	..	..
Loans to Industry	126	118	127	..	..	..
Other	44	68	80	..	..	..
Total	10,292	11,080	11,914	1,286	1,410	1,558

State Taxation

In Tasmania, the chief State taxes, in order of importance, are Motor Tax; Stamp Duties (on cheques, legal documents, &c.); Probate and Succession Duties and Land Tax.

The following table gives a summary of State taxation taken into Consolidated Revenue for a three-year period:

State Taxation Collections Paid Into Consolidated Revenue
(*\$'000*)

Tax or Licence	1961-62	1962-63	1963-64
Probate and Succession Duties	1,968	1,764	2,135
Stamp Duties (excluding Bookmakers' Tickets)	1,800	2,086	2,190
Land Tax	1,094	1,258	1,554
Liquor Tax and Licences	566	578	591
Racing Taxes (including Bookmakers' Tickets)	462	480	497
Motor Taxes	2,508	2,832	3,019
Entertainment Tax	276	208	53
Other Licences	20	22	27
Total (a)	8,694	9,228	10,066

(a) Excluded are the following amounts received from the Victorian Government under an Interstate Lotteries Agreement: 1961-62, \$137,914; 1962-63, \$134,476; 1963-64, \$145,394.

Not all State taxation is paid into the Consolidated Revenue Fund, some portion of total Motor Taxes and total Racing Taxes being reserved for special purposes as shown in the following table:

State Taxation Collections Paid to Special Funds
(\$'000)

Particulars	1961-62	1962-63	1963-64
Motor Taxation— Retained by Transport Commission..	570	618	686
Racing Taxation— Paid to Racing Clubs and Racing Commission	346	338	358
Total	916	956	1,044

The following summarises total taxation collected by the State:

Total State Taxation Collections (a)
(\$'000)

Particulars	1961-62	1962-63	1963-64
Paid into Consolidated Revenue	8,694	9,228	10,066
Paid into Special Funds	916	956	1,044
Total	9,610	10,184	11,110

(a) Taxation is described in fuller detail in a subsequent section—"Taxation in Tasmania".

Consolidated Revenue Fund—Expenditure

In the following table, a summary is given of Consolidated Revenue Fund expenditure classified according to function. Group totals only are shown and these are arranged in descending order of magnitude:

Consolidated Revenue Fund—Summary of Expenditure

Classification by Function	Amount (\$'000)			Per Head of Population (\$)		
	1961-62	1962-63	1963-64	1961-62	1962-63	1963-64
Public Debt Charges	18,512	20,390	22,317	51.90	56.30	60.94
Education, Science, Art and Research	13,046	14,170	15,676	36.58	39.14	42.80
Development and Maintenance of State Resources	8,680	7,800	8,349	24.34	21.52	22.80
Promotion of Public Health and Recreation	6,988	7,234	7,658	19.58	19.96	20.92
Legislature and General Administration	4,452	4,670	5,019	12.48	12.92	13.72
Business Undertakings	4,294	4,148	3,859	12.04	11.46	10.54
Maintenance of Law, Order and Public Safety	3,486	3,692	4,043	9.78	10.20	11.04
Welfare	1,620	1,610	1,769	4.54	4.44	4.82
Regulation of Trade and Industry	274	306	330	0.76	0.84	0.90
Total	61,352	64,020	69,020	172.00	176.78	188.48

The principal items of expenditure on which the above statistical classification is based are shown below:

**Consolidated Revenue Fund—Expenditure
(\$'000)**

Classification by Function	1961-62	1962-63	1963-64
Public Debt Charges—			
Interest	15,666	17,340	18,934
National Debt Sinking Fund	2,640	2,914	3,124
State Sinking Fund	8	6	7
Other (Loan Management Charges, &c.) ..	198	130	252
Total	18,512	20,390	22,317
Education, Science, Art and Research—			
Primary, Secondary and Technical Education ..	11,692	12,584	14,109
University and Engineering Board ..	866	894	925
Other Education (including Adult Education) ..	98	196	149
Libraries, Museums, Art Galleries, Orchestras, &c.	390	496	493
Total	13,046	14,170	15,676
Development and Maintenance of State Resources—			
Land Settlement and Survey	616	660	683
Agricultural and Pastoral	2,148	2,138	2,291
Mining	320	350	381
Forestry	1,196	964	1,089
Fisheries and Game	56	50	64
Roads and Bridges	3,698	2,900	3,077
Shipping Services	64	66	73
Tourist Activities	464	508	546
Other	118	164	145
Total	8,680	7,800	8,349
Promotion of Public Health and Recreation—			
Mental Hospitals	1,172	1,218	1,416
Other Hospitals	4,204	4,316	4,616
Baby Health Centres	172	174	184
Medical Inspection, School Children	186	172	211
Public Health Administration and Services ..	1,046	1,184	1,089
Gardens, Parks, Sporting Clubs, &c. ..	208	170	142
Total	6,988	7,234	7,658
Legislature and General Administration—			
Legislature—			
Governor	94	84	93
Parliament and Ministers	440	500	495
Electoral	52	42	89
Financial Administration—			
Treasury	358	376	424
Pensions and Superannuation	802	786	856
Auditor General	210	214	232
Administration and Services, n.e.i. ..	2,496	2,668	2,830
Total	4,452	4,670	5,019
Business Undertakings—			
Transport Commission—Losses, Subsidies ..	2,810	2,746	2,395
Metropolitan Transport Trust—Subsidy ..	720	600	680
Water Supplies—Subsidy and Administration ..	538	592	610
Electricity—Subsidies	34	28	28
Housing—Subsidies and Losses	50	40	46
Other	142	142	100
Total	4,294	4,148	3,859

Consolidated Revenue Fund—Expenditure—continued
(\$'000)

Classification by Function	1961-62	1962-63	1963-64
Maintenance of Law, Order and Public Safety—			
Administration of Justice, Courts, &c.	626	644	729
Police	2,156	2,252	2,527
Prisons	456	462	500
Reformatories	90	90	105
Public Safety (Fire Brigades, &c.)	158	244	182
Total	3,486	3,692	4,043
Welfare—			
Relief of Destitute, Aged and Incapacitated ..	1,304	1,270	1,400
Child Welfare (Children of the State, &c.) ..	130	142	149
Other Services and Administration	186	198	220
Total	1,620	1,610	1,769
Regulation of Trade and Industry—			
Factories, Shops and Labour Legislation, &c. ...	274	306	330
Grand Total	61,352	64,020	69,020

Source of Data

The classification of expenditure by function is derived from an analysis of published accounts. In some cases, the functional analysis simply repeats a total specified in the Treasurer's Financial Statement, (e.g. Auditor-General's Department, Mines Department, Police Department, &c.). In other cases, individual minor items have been classified to function and then combined to produce the sub-group totals.

Public Debt Charges

This is the largest item of expenditure but a high proportion is recovered from semi-government authorities. The effect of these recoveries is illustrated in the following table:

Net Burden on Consolidated Revenue—Public Debt Charges
(\$'000)

Particulars	Interest			Sinking Fund Contribution		
	1961-62	1962-63	1963-64	1961-62	1962-63	1963-64
Public Debt Charges—						
Expenditure, Con-						
solidated Revenue	(a) 15,864	(a) 17,470	(a) 19,186	(b) 2,640	(b) 2,914	(b) 3,124
Recovered from						
Semi-Government						
Bodies	10,292	11,080	11,914	1,286	1,410	1,557
Net Burden On Con-						
solidated Revenue(c)	5,572	6,390	7,272	1,354	1,504	1,567

(a) Includes loan management charges.

(b) Contribution payable under the Financial Agreement to the National Debt Sinking Fund.

(c) In respect of non-revenue producing assets such as schools, roads, &c.

Administration and Services, n.e.i.

The salaries and expenses of departments not associated with any listed function have been included in the item "Administration and Services, n.e.i." (e.g. Public Service Commissioner's Department, Public Works Department, Premier and Chief Secretary's Department, &c.). Also included in this item are the upkeep of public buildings and other expenditure which cannot be allocated to a listed function.

Business Undertakings

Unlike the Consolidated Revenue Funds of some Australian States, the Tasmanian Fund excludes the gross receipts and expenditure of State business undertakings such as railways and tramways, water supply, &c. The principal charges in 1963-64 under this item were incurred in respect of the Transport Commission and consisted of: (i) re-imbursement of net loss, 1962-63 (\$840,749) and (ii) proceeds of State Land Tax paid to Commission (\$1,554,261). Another major item was a contribution of \$680,000 to the Metropolitan Transport Trust which experienced a net trading loss of \$702,294 in 1963-64.

Roads and Bridges

The chief expenditure under this item in 1963-64 was a transfer of \$3,018,744 to the State Highway Trust Fund, such sum representing revenue received from motor tax, vehicle registrations, drivers' licences and public vehicle fees and charges, less \$686,252 retained by the Transport Commission to meet the cost of vehicle registration and traffic control.

State Trust and Special Funds

Revenues of the State are payable to Consolidated Revenue with the exception of certain revenues which have been set aside by various Acts of Parliament for specific purposes and which are payable into special funds or accounts at the State Treasury. The volume of these transactions is high, \$72,122,225 being received in 1963-64, \$71,602,016 being expended and the balance in the funds changing from \$3,631,759 (1st July, 1963) to \$4,151,968 (30th June, 1964).

It should be noted that many accounts in the Trust and Special Funds indicate Treasury transactions which are merely supplementary to those recorded under Consolidated Revenue and Loan Funds; examples are given below:

State Trust and Special Funds—Selected Accounts, 1963-64

(\$)

Account	Receipts	Expenditure
Commonwealth Tax Deductions Suspense Account (a)	3,090,271	3,090,314
Pay-Roll Tax Suspense (b)	717,346	717,346
Hydro-Electric Commission Suspense Account (c) ..	1,474,516	1,834,181

- (a) Wages and salaries included under Consolidated Revenue and Loan Fund expenditure are shown at gross value; however, the deductions applicable to wage and salary earners on Government pay-rolls are passed, via this account, to the Commonwealth.
- (b) Expenditure under Consolidated Revenue and Loan Fund includes pay-roll tax; however, pay-roll tax applicable to Government payrolls is passed, via this account, to the Commonwealth.
- (c) The Treasury acts as agent for meeting overseas liabilities incurred by the Hydro-Electric Commission; these liabilities, being mainly incurred in the acquisition of plant and equipment, are largely accounted for in Loan Fund expenditure.

Many accounts are concerned with Government activities financed by the Commonwealth, the State acting as trustee or agent in the transactions; examples are given:

State Trust and Special Funds—Selected Accounts, 1963-64
(£)

Account	Receipts	Expenditure
Tasmanian University (Commonwealth Grants) Account (a)	651,802	651,802
Commonwealth Free Milk Scheme Account (b) ..	404,785	384,630
Home Builders Fund (c)	2,387,412	2,300,782

(a) Treasury passes Commonwealth grant to University of Tasmania.

(b) Education Department administers free milk scheme for school children on behalf of Commonwealth.

(c) Agricultural Bank administers loans to home builders, the source of funds being the Commonwealth.

In the case of some accounts, there is provision for crediting the Trust and Special Funds with contributions from Consolidated Revenue, an important example being the State Highways Trust Fund:

State Trust and Special Funds—State Highways Trust Fund, 1963-64
(£)

Item	Receipts	Expenditure
Commonwealth Contribution (a)	6,070,000	..
Grant from Consolidated Revenue	3,018,744	..
Roads Expenditure	92,574	9,287,580
Self-Balancing Entries (Contra)	2,316,178	2,316,178
Fund Entries	11,497,496	11,603,758

(a) Includes \$270,000 for Gordon River road.

The Forestry Fund Account records transactions under legislation requiring revenue from Forestry to be paid to Consolidated Revenue, and for Consolidated Revenue to expend an equal amount on Forestry in the following year:

State Trust and Special Funds—Forestry Fund Account, 1963-64
(£)

Item	Receipts	Expenditure
Grant from Consolidated Revenue (a)	1,089,406	..
Expenditure on Forestry	21,994	1,077,760
Self-Balancing Entries (Contra)	199,292	199,292
Fund Entries	1,310,692	1,277,052

(a) Consolidated Revenue recorded Forestry receipts of \$1,089,406 in 1962-63; this sum therefore became the 1963-64 contribution from Consolidated Revenue.

Some of the funds held in trust are not owned by the State Government, examples being: Prisoners' Earnings Deposit Account; Tasmanian Sanatorium Donations Account; St. John's Park Inmates Trust Account. Other funds are held on behalf of semi-government authorities, such as the Hydro-Electric Commission, the Agricultural Bank, the Transport Commission, &c.

Since the number of individual accounts in the State Trust and Special Funds approaches 120, a description or analysis of each account is beyond the scope of the Year Book. The annual report of the Auditor-General is a useful source in any investigations of transactions in the Trust and Special Funds.

State Loan Fund

The *Public Account Act* 1962 has, *inter alia*, the following provisions relating to the Loan Fund: (i) the Governor, on Treasury advice, may make transfers between block votes as long as the total authorised amount is not exceeded; (ii) a sum of up to \$400,000 may be spent for purposes not previously authorised; (iii) for purposes previously authorised, an additional sum of up to \$1,000,000 may be spent; (iv) in instances of expenditure outside the provisions of a specific Loan Fund Appropriation Act, the ratification of such action is to be sought from Parliament before the close of the following financial year. The Act also provides that the unexpended balances of votes at the close of the financial year lapse (in contrast with previous practice when such balances were carried forward from year to year).

Expenditure from the Loan Fund is devoted to two main purposes: (i) the making of advances to State semi-government authorities; (ii) the carrying out of the State's own works programme. Such funds, whether lent to other authorities for their works programmes or spent directly by the State, result in the creation of new capital assets, a large proportion of which are revenue earning and therefore capable of re-imbursing the State for the debt charges which it has incurred. (The previous section on Consolidated Revenue Expenditure shows the *gross* and *net* expenditure on annual debt charges.)

In addition to money from loan raisings, the Loan Fund records other receipts such as repayment of advances and Commonwealth capital grants; it is usual, therefore, to record loan expenditure on both gross and net bases. The annual net loan expenditure is, in effect, the disbursement of the new borrowings for the year, augmented or diminished by the net movement in the Loan Fund balance. The following table shows the calculation of net loan expenditure from two viewpoints; (i) as a residue from gross loan expenditure; (ii) as the algebraic sum of new loan raisings and the net movement in the Loan Fund balance:

State Loan Fund—Calculation of Net Loan Expenditure
(\$'000)

Particulars	1961-62	1962-63	1963-64
(i) Gross Loan Expenditure ..	32,520	33,332	35,354
Less Repayments	1,836	2,388	2,028
Less Commonwealth Grants ..	596	434	421
Net Loan Expenditure ..	30,088	30,510	32,905
(ii) New Borrowings	29,072	30,824	32,150
Decrease, Loan Fund Balance..	1,016	— 318	751
Other (a) .. ..	..	4	4
Net Loan Expenditure ..	30,088	30,510	32,905

(a) Discount and capital appreciation items.

The following table shows gross and net loan expenditure annually since 1947-48:

Loan Fund—Gross and Net Loan Expenditure
(*\$'000*)

Year	Loan Expenditure		Year	Loan Expenditure	
	Gross	Net		Gross	Net
1947-48	8,360	6,528	1956-57	23,544	22,038
1948-49	11,050	9,012	1957-58	23,390	21,666
1949-50	11,742	9,884	1958-59	27,610	25,112
1950-51	30,802	27,464	1959-60	29,130	26,442
1951-52	34,048	30,298	1960-61	33,866	30,612
1952-53	40,152	26,136	1961-62	32,520	30,088
1953-54	31,816	27,544	1962-63	33,332	30,510
1954-55	35,310	29,378	1963-64	35,354	32,905
1955-56	35,212	27,048	1964-65	35,816	33,352

In the remainder of this section, tables will deal with *net* loan expenditure only since this is directly related to aggregate net loan expenditure and to the State Public Debt.

In 1963-64, the principal items of loan fund expenditure were: (i) hydro-electric works; (ii) water supply schemes; (iii) roads and bridges; (iv) education buildings; (v) hospitals. The following table shows *net* loan expenditure according to purpose for three years and the aggregate net loan expenditure to 30th June, 1964:

Loan Fund—Net Loan Expenditure, Annual and Aggregate
(*\$'000*)

Purpose	Annual Net Expenditure			Aggregate Net Expenditure to 30th June, 1964
	1961-62	1962-63	1963-64	
Capital for State Business Undertakings—				
Hydro-Electric Development	13,628	13,500	14,200	222,905
Railways, Transport and Tramways	410	Cr. 22	434	34,411
Water Supply Schemes	1,742	3,952	1,336	12,640
Other	26	12	48	2,184
Total	15,806	17,442	16,018	272,140
Loans and Advances—				
Aluminium Industry Agreements	800	Cr. 66	533	5,729
Assistance to Industries	Cr. 8	Cr. 378	Cr. 55	2,341
Tourist Accommodation Loans	176	58	70	1,231
Loans to Local Bodies	320	126	118	1,528
Housing—Advances and Construction (a)	Cr. 348	Cr. 200	Cr. 412	28,577
Primary Producers (including Land Settlement) (b)	626	226	286	4,602
Total	1,566	Cr. 234	540	44,008

Loan Fund—Net Loan Expenditure, Annual and Aggregate—continued
(\$'000)

Purpose	Annual Net Expenditure			Aggregate Net Expenditure to 30th June, 1964
	1961-62	1962-63	1963-64	
State Works and Purposes—				
Roads, Bridges and Harbours	4,068	3,798	4,761	47,704
School Buildings and University	3,184	3,598	4,293	38,342
Hospital Buildings ..	2,874	3,306	3,805	26,150
Other Public Buildings ..	662	504	610	11,778
Forestry ..	698	884	1,285	11,225
Other Public Works and Purposes ..	1,082	902	1,400	14,590
Total	12,568	12,992	16,154	149,789
Financial—				
Loan Flotation and Conversion Expenses	76	198	32	5,118
Capital Losses Funded ..	Cr. 40	..	..	2,960
Revenue Deficits Funded ..	112	112	161	11,493
Total	148	310	193	19,571
Grand Total	30,088	30,510	32,905	485,508

- (a) Expenditure under the second Commonwealth-State Housing agreement is excluded. Net advances under the agreement were \$5,800,700 in 1963-64 and net aggregate advances to 30th June, 1964 were \$36,799,386.
- (b) Expenditure for War Service Land Settlement from Commonwealth funds is excluded. Net advances amounted to \$1,533,474 in 1963-64 and net aggregate advances to 30th June, 1964 were \$41,401,670.

The headings in the previous table have the following significance: expenditure classified under "Business Undertakings" and "Loans and Advances" is, in effect, a form of investment by the State. Such investment has two effects: (i) the *net* burden on Consolidated Revenue in respect of annual debt charges is not increased, since the Treasury obtains interest and sinking fund payments from the various authorities and enterprises to which money has been advanced; (ii) in some cases, the advances are recoverable and are credited to the Loan Fund as repayments (e.g. Assistance to Industries). Expenditure under "State Works and Purposes" results in the creation of physical assets (e.g. bridges, schools, &c.) but the associated annual debt charges are not recovered directly and lead to an increase in the net burden on Consolidated Revenue. Expenditure under "Financial" is not associated with the creation of any assets but it too increases the net burden on Consolidated Revenue in respect of annual debt charges. In each of the last three years, more than half of the annual net loan expenditure has been invested by the State in loans to other authorities and enterprises.

In the case of some State business undertakings, the capital indebtedness of the authority may not correspond closely with the associated aggregate net expenditure recorded in the Loan Fund, the principal example being the Transport Commission; the capital indebtedness of the railways was reduced by \$8,756,000 as from 1st July, 1936 by transfer of the annual debt charges on this sum as a burden on Consolidated Revenue. Under the heading "Financial" appears an item "Capital Losses Funded"; the principal component of the aggregate to 30th June, 1964 was \$2,357,954 representing losses on Returned Soldiers' Settlement schemes initiated after the First World War.

Aggregate net loan expenditure records the expenditure of loan borrowings from the commencement of the State Public Debt and the table indicates that such money has been used for the following principal purposes (in descending order of magnitude): (i) hydro-electric development; (ii) roads, bridges and harbours; (iii) school buildings; (iv) railways, transport and tramways; (v) housing; (vi) hospitals.

The relationship between aggregate net loan expenditure, total loans raised and the State Public Debt is established in the following table:

Aggregate Net Loan Expenditure and State Public Debt (a) at 30th June (\$'000)

Particulars	1962	1963	1964
Aggregate Net Loan Expenditure	422,092	452,602	485,508
Unexpended Balance, Loan Fund ..	3,042	3,360	2,609
Grand Total Loans Raised ..	425,134	455,962	488,117
Less Aggregate Redemptions From Sinking Funds	40,178	43,702	47,714
Less Liability for Exchange on Oversea Redemption	5,704	7,666	8,092
State Public Debt (a)	379,252	404,594	432,311

(a) Oversea component at exchange rates prevailing on 1st July, 1927.

State Public Debt

The State Public Debt is calculated on two bases: (i) With overseas debt calculated at "mint par of exchange", i.e. at the exchange rates prevailing on 1st July, 1927. "Mint par debt" is the official debt for the purpose of determining sinking fund contributions payable under the Financial Agreement, 1927. (ii) With overseas debt calculated at current rates of exchange. The following table shows the State Public Debt calculated on both bases:

State Public Debt at 30th June, 1964—At Mint Par of Exchange and at Current Rates of Exchange

Place in Which Debt Repayable	\$ Aust. at Mint Par of Exchange		\$ Aust. at Current Rates of Exch.	
	Conversion Rate of \$A (a)	Debt (\$'000)	Conversion Rate of \$A (b)	Debt (\$'000)
Australia .. ..	.. ..	408,724	.. ..	408,724
London	£0.5 sterling	17,724	£0.4 sterling	22,155
New York	U.S. \$2.43325	4,684	U.S. \$1.1200	10,177
Canada	C. \$2.43325	486	C.\$1.2108	976
Switzerland	S. Francs 12.61965	294	S. Francs 4.89775	756
Netherlands	Guilders 6.053925	399	Guilders 4.05440	596
Total .. ..	.. ..	432,311	.. ..	443,384

(a) Exchange rates at 1st July, 1927 (rates for £A 0.5).

(b) Exchange rates at 30th June, 1964 (rates for £A 0.5).

The principal changes between the 1927 rates of exchange and those current today occurred in two stages: (i) 1930, when the Australian pound was devalued 20 per cent in relation to sterling; (ii) 1949, when the Australian pound was devalued by 30.5 per cent parallel to a similar devaluation in sterling.

In the tables that follow, the Public Debt is stated in terms of exchange rates prevailing at 1st July, 1927.

The growth of the public debt in the last ten years is shown in the following table:

State Public Debt—Place of Flotation and Nominal Interest Payable (\$'000)

At 30th June	Debt Redeemable In—						Total	Nominal Interest (a)
	London	New York	Switzer- land	Canada	Nether- lands	Australia		
1955..	13,984	440	..	..	..	205,186	219,610	8,016
1956..	13,984	628	..	..	..	229,834	244,446	9,150
1957..	12,972	692	..	..	..	251,504	265,168	10,430
1958..	12,932	1,308	..	..	..	271,882	286,122	11,504
1959..	14,732	1,918	..	..	..	291,000	307,650	12,540
1960..	14,682	2,482	..	..	..	313,880	331,044	13,806
1961..	14,662	3,056	294	505	..	336,042	354,559	15,362
1962..	14,652	3,572	294	505	399	359,830	379,252	16,658
1963..	16,092	4,846	294	505	399	382,458	404,594	18,012
1964..	17,724	4,684	294	486	399	408,724	432,311	19,259

(a) Interest has been calculated on the face value of individual loans outstanding at 30th June; no allowance has been made for variations in exchange rates since 1st July, 1927.

A notable feature of the public debt of the State is that approximately 95 per cent of indebtedness is now domiciled in Australia. There has been a gradual change from the situation which existed a century ago when nearly all loans were financed in London. In 1870, the State's public debt (\$2,537,400) was wholly redeemable in London and even in 1900, less than 10 per cent of the State debt was redeemable in Australia.

Public Debt Transactions

The following table shows particulars of loans raised and redeemed during a three-year period. It will be observed that redemption of loans falling due in any particular year is achieved, in the main, by conversion (i.e. by renewal of the original loans on new terms and conditions):

State Public Debt—Conversion and Redemption (\$'000)

Particulars	1961-62	1962-63	1963-64
Loans Raised—			
For Additional Borrowings	28,142	28,862	31,728
For Conversion Purposes	14,114	81,692	18,832
For Redemption, Maturing Loans .. ..	..	3,810	568
Total Raisings	42,256	114,364	51,128
Deduct—			
Loans Redeemed—			
By Conversion	14,114	81,692	18,832
From New Cash Raisings .. ..	..	3,806	567
From National Debt Sinking Fund	3,448	3,524	4,012
Net Increase in Public Debt	24,694	25,342	27,717
Debt at End of Year	379,252	404,594	432,311

The following table shows the due dates of loans outstanding at 30th June, 1964:

Due Dates of Loans at 30th June, 1964
(£'000)

Maturing During	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1964-65	41,190	..	..	..	41,190
1965-66	62,696	3,796	..	..	66,492
1966-67	40,082	..	196	..	40,278
1967-68	28,840	5,292	..	..	34,132
1968-69	33,356	..	..	..	33,356
1969-70	15,458	1,390	..	..	16,848
1970-71	19,840	..	146	..	19,986
1971-72	17,662	..	232	..	17,894
1972-73	25,186	..	524	..	25,710
1973-74	10,858	..	..	..	10,858
1974-75	9,334	1,982	..	..	11,316
After 30th June, 1975 (a)	104,222	5,264	3,586	1,179	114,251
Total	408,724	17,724	4,684	1,179	432,311

(a) Falling due in financial years 1975-76 to 1986-87.

The following table shows the rates of interest which were payable on the State Debt at 30th June, 1964, and the portions of the debt at each rate in Australia, London, New York and elsewhere overseas respectively:

Rates of Interest on Public Debt at 30th June, 1964
(£'000)

Rate of Interest (Per Cent)	Amount Maturing				Total
	In Australia	In London	In New York	Elsewhere Overseas	
1.0	612	..	..	..	612
3.0 .. ..	..	5,298	..	..	5,298
3.125	31,798	..	..	..	31,798
3.25 .. ..	..	3,372	..	..	3,372
3.5 .. ..	..	..	196	..	196
3.75	22,816	..	..	..	22,816
4.0	17,992	3,790	..	..	21,782
4.125	18,240	..	..	..	18,240
4.1875	1,812	..	..	..	1,812
4.25	58,352	..	..	..	58,352
4.3375	850	..	..	..	850
4.5	94,510	..	144	294	94,948
4.625	2,954	..	..	..	2,954
4.75	35,688	..	524	..	36,212
5.0	98,036	..	704	400	99,140
5.25	7,702	..	1,146	..	8,848
5.375	17,362	..	..	..	17,362
5.5 .. ..	..	4,938	1,970	..	6,908
5.75 .. ..	..	..	..	485	485
6.0 .. ..	..	326	..	..	326
Total	408,724	17,724	4,684	1,179	432,311

The next table summarises the transactions of the National Debt Commission in relation to the Tasmanian Public Debt:

National Debt Commission—Transactions in Respect of Tasmanian Public Debt (\$'000)

Particulars	1961-62	1962-63	1963-64
Balance at Beginning of Period	164	132	374
Contributions—			
From Commonwealth Government	896	972	1,062
From State Government	2,640	2,906	3,122
Interest Received (Net)	2	..	10
Funds Available	3,702	4,010	4,568
<i>Deduct</i>			
Redemptions and Re-purchases (a)—			
At Mint Par of Exchange	3,448	3,524	4,012
Exchange Adjustment	122	112	218
Balance at End of Period	132	374	338

(a) The sum of the two specified items represents the cost at current rates of exchange.

Taxation in Tasmania

Introduction

As citizens of the Commonwealth, Tasmanians are subject to taxes levied both by the State and the Commonwealth. The relative magnitude and severity of the two forms of taxation are compared in the following table:

Taxation, State of Tasmania and Commonwealth, 1963-64 (a)

Tax	Amount (\$'000)		Per Head of Population (\$)	
	Tasmania (b)	Commonwealth (c)	Tasmania (d)	Commonwealth (d)
Income and Social Services Contribution .. .. .	..	1,874,484	..	170.00
Customs and Excise .. .. .	..	815,025	..	73.92
Sales .. .. .	..	325,105	..	29.48
Pay Roll .. .. .	..	136,443	..	12.38
Probate and Succession Duties	2,135	39,871	5.84	3.62
Motor	3,705	..	10.12	..
Stamp Duties	2,192	..	5.98	..
Land	1,554	..	4.24	..
Racing	855	..	2.34	..
Liquor	590	..	1.62	..
Entertainment	53	..	0.14	..
All Other	26	27,982	0.08	2.54
Total	11,110	3,218,910	30.36	291.94

(a) Collections from all sources of taxation, including amounts paid to special funds.

(b) State taxation collected by Tasmanian Government.

(c) Commonwealth Government taxation for Australia.

(d) Based on respective *mean* populations.

Assuming that Tasmanians contributed to Commonwealth taxation in strict proportion to the relative mean populations of the State and the Commonwealth, it would be theoretically correct to add the two per capita figures (\$30.36 and \$291.94) and arrive at a figure of \$322.30 as the total per capita taxation of the Tasmanian and Commonwealth Governments within the State.

An alternative way of examining the problem is to refer to total Commonwealth taxes collected in Tasmania but this measure is unsatisfactory for a number of reasons, the chief defects being:

- (i) Commonwealth income tax and estate duty are recorded not only in the six States but also in a *Central Office* collecting from individuals and companies with specified interstate income or assets. Central Office collections of income tax amount to approximately one-third of the Australian total and, to this extent, reduce the collections credited to the six States.
- (ii) Goods shipped to Tasmania will, in some cases, already have been taxed in another State in respect of customs, excise or sales taxes. Even though other States are credited with the collection of these three taxes, the fact remains that Tasmanians bear their incidence in the form of increased commodity prices. The amount of tax collected in other Australian States on goods shipped to Tasmania is not known.

Estimated Incidence

The following table shows actual collections of Commonwealth taxes in the State and also their estimated incidence:

**Taxation—Collected by Commonwealth in Tasmania and
Estimated Incidence in Tasmania
(\$'000)**

Tax	1961-62	1962-63	1963-64
Collected in Tasmania—			
Income Tax (a)	33,274	34,450	37,935
Estate Duty (a)	672	674	702
Wool Tax	122	124	121
Canning Fruit Charge	2	2	1
Other Export Charges	170	172	220
Payroll Tax	3,308	3,456	3,733
Gift Duty	190	144	146
Stevedoring Industry Charge	494	602	691
Diesel Tax Refunds	Dr. 6	..	..
Sales Tax	6,052	6,640	7,048
Customs	2,430	2,494	2,764
Excise	14,474	14,716	14,939
Total Collected in Tasmania	61,182	63,474	68,300
Collected Elsewhere in Australia (b)—			
Sales Tax	3,256	3,216	3,106
Customs	2,898	4,124	4,500
Excise	2,142	2,564	3,242
Estimated Incidence (a)	69,478	73,378	79,148

(a) Excludes Central Office collections.

(b) Estimated; goods on which these taxes were paid are assumed to have been sold in Tasmania.

In estimating the collection, in other Australian States, of the main taxes affecting Tasmanians, account was taken of the latest retail sales figures which show Tasmanian *per head* sales to be 94 per cent of the corresponding Australian figure. Accordingly the *per head* incidence of customs, excise and sales taxes in Tasmania was taken to be 94 per cent of the Australian *per head* collection figure for each tax. It will be apparent that the estimated incidence still falls far short of a realistic figure due to the unknown Tasmanian contribution to Central Office collections of income tax and estate duty.

Commonwealth Income Tax and Social Services Contribution

Uniform taxation on incomes throughout Australia was adopted in 1942 when the Commonwealth Government became the sole authority levying this tax.

With the introduction of Social Services Contribution from 1st July, 1946, the levy of taxation on the incomes of individuals was divided into two separate taxes: (i) Income Tax; (ii) Social Services Contribution. Both taxes were based upon the same definitions of assessable income and both were assessed and collected concurrently. Company income was not subject to Social Services Contribution except with regard to the undistributed income of private companies. The two taxes have since been merged into a single levy known as "Income Tax and Social Services Contribution" and this title now refers to the tax imposed on the incomes of both individuals and companies. It first applied to the tax imposed on incomes derived by individuals during the year ended 30th June, 1951, and by companies during the year ended 30th June, 1950.

Certain types of income are exempt from tax in Australia. These include income from gold and uranium mining; war, invalid, age, and widows' pensions; child endowment; and unemployment and sickness benefits.

Expenses incurred in earning income and losses incurred in previous years are allowable deductions in calculating taxable income.

For the income years 1950-51 to 1962-63, taxpayers without dependants were exempt from income tax if their income did not exceed \$208. For 1963-64 to 1965-66, this exemption was \$416.

However, the possession of dependants allows the taxpayer to claim concessional deductions and these have the effect of raising the effective exemption level. Thus, in the period 1963-64 to 1965-66 (income years), a male married taxpayer was exempt if his income did not exceed \$702; with one child, \$884; with two children, \$1,014; with three children, \$1,144; and with four children, \$1,274. There were also special conditions affecting the tax payable by aged persons (i.e. men attaining 65 years and women 60 years).

For the income year 1963-64, Income Tax and Social Services Contribution was payable on the incomes of individuals and commenced at a taxable income of \$417. However, certain limitations applied to the tax payable by aged persons, over 65 years of age in the case of a male and over 60 years in the case of a female. Concessional deductions were allowed to taxpayers on account of dependants, certain medical and dental expenses, life insurance premiums, superannuation contributions, medical or hospital benefits fund payments, education expenses, &c. and were subtracted from income to calculate taxable income. Dependants included spouse, parents, parents-in-law, children under sixteen years of age, student children under 21 years of age, invalid child, brother or sister over 16 years of age, or daughter-housekeeper for widow or widower. A concessional deduction might be allowed for a housekeeper having the care of children under 16 years of age or of an invalid relative where the taxpayer did not contribute to the maintenance of a spouse or daughter-housekeeper. The amount of concessional deduction allowable in respect of each type of dependant and housekeeper was:

spouse, \$286; parent or parent-in-law, \$286; children under 16 years: one child, \$182, other children, \$130 each; student child, 16 to 21 years, \$182 each; invalid relative not less than 16 years, \$182 each; housekeeper or daughter-housekeeper, \$286.

In the matter of education expenses, payments actually made for recognised school uniforms, fees, books, fares, &c. were allowed as deductions up to a maximum of \$300 per child or dependant.

The following table shows the rates of Income Tax and Social Services Contribution for individuals for the income year 1963-64:

**Australia—Rates of Income Tax and Social Services
Contribution for Individuals, Income Year, 1963-64
(\$)**

Selected Total Taxable Income (a)	Tax and Contribution Payable	Selected Total Taxable Income (a)	Tax and Contribution Payable
418	1.00	3,200	480.54
500	9.10	3,400	536.75
600	15.00	3,600	592.96
700	23.00	3,800	653.92
800	30.90	4,000	714.88
1,000	51.50	4,800	984.04
1,200	75.20	5,600	1,275.38
1,400	102.10	6,400	1,588.88
1,600	132.20	7,200	1,921.38
1,800	165.50	8,000	2,272.88
2,000	201.90	8,800	2,643.38
2,200	243.00	10,000	3,232.38
2,400	284.20	12,000	4,277.38
2,600	330.92	16,000	6,478.21
2,800	377.63	20,000	8,774.04
3,000	429.08	32,000	15,994.04

(a) The tax on incomes unspecified in this table may be calculated by simple proportion, e.g. tax on \$1,700 equals \$132.20 plus 100 (\$165.50 less \$132.20). Incomes in excess of 200

\$32,000 were further taxed at the rate of 63.333 cents (6/4d.) in the \$ on the excess.

There has been little variation in the rates of income tax on individuals since 1954-55, the chief change relating to a general five per cent rebate of tax operative in the years 1959-60, 1961-62, 1962-63 and 1963-64. (In the preceding table, the five per cent rebate has been deducted in arriving at the tax payable.) For the year 1964-65, the rebate was withdrawn and, for 1965-66, a 2½ per cent levy was added. The other major change was the lift in the minimum taxable income from the previous \$210 to \$417 in 1963-64.

Selected rates of income tax and social services contribution payable for the income year 1965-66 are summarised as follows:

**Australia—Rates of Income Tax and Social Services
Contribution for Individuals, Income Year, 1965-66
(\$)**

Selected Total Taxable Income	Tax and Contribution Payable (a)	Selected Total Taxable Income	Tax and Contribution Payable (a)
1,000	54.83	10,000	3,487.56
2,000	217.81	12,000	4,615.06
4,000	771.31	16,000	6,988.96
6,000	1,544.57	20,000	9,465.36
8,000	2,452.31	(b) 32,000	17,251.26

(a) Five per cent rebate withdrawn and 2½ per cent levy applied.

(b) Income in excess of \$32,000 is taxed at the rate of 68.333 cents (6/10d.) in the \$ on the excess.

A system is in operation to assist the majority of taxpayers in the payment of their taxes by means of regular deductions from salaries or wages. The amounts deducted are regulated so that the employee will have paid the approximate amount of his taxation by the end of the income year. At the end of the income year, the employee makes a return in which he may claim the refund of any overpayment of taxation instalments.

The following table shows the number of taxpayers, taxable income, and Income Tax and Social Services Contribution assessed during the year 1962-63 (based on incomes received during the year 1961-62):

**Tasmania, Income Tax and Social Services Contribution—Income Year, 1961-62
Individuals—Residents and Non-Residents**

Grade of Actual Income	Taxpayers	Taxable Income			Net Income Tax and Social Services Contribution Assessed
		Salaries and Wages	Other	Total	
\$	No.	\$'000	\$'000	\$'000	\$'000
210- 399 ..	5,864	1,529	215	1,744	14
400- 599 ..	6,310	2,438	467	2,905	49
600- 799 ..	6,842	3,604	730	4,334	127
800- 999 ..	7,749	5,213	1,027	6,240	252
1,000- 1,199 ..	7,862	6,002	1,513	7,515	379
1,200- 1,399 ..	8,815	8,228	1,673	9,901	598
1,400- 1,599 ..	8,407	8,670	1,883	10,553	716
1,600- 1,799 ..	9,761	11,104	2,031	13,135	963
1,800- 1,999 ..	11,528	14,391	2,212	16,603	1,303
2,000- 2,199 ..	11,959	16,306	2,197	18,503	1,551
2,200- 2,399 ..	10,605	15,306	2,280	17,586	1,566
2,400- 2,599 ..	8,480	12,936	2,219	15,155	1,437
2,600- 2,799 ..	6,459	10,428	2,059	12,487	1,261
2,800- 2,999 ..	5,089	8,779	1,865	10,644	1,140
3,000- 3,999 ..	12,493	23,615	7,522	31,137	3,855
4,000- 5,999 ..	5,942	12,594	8,868	21,462	3,517
6,000- 7,999 ..	1,403	3,278	4,420	7,698	1,684
8,000- 9,999 ..	592	1,356	3,047	4,403	1,159
10,000-19,999 ..	602	1,320	5,522	6,842	2,360
20,000-29,999 ..	50	103	929	1,032	458
30,000 and over	6	46	170	216	111
Total ..	136,818	167,246	52,849	220,095	24,500

The following definitions apply to the preceding table:

- (i) Actual Income: Gross income *including exempt income* less expenses incurred in earning that income.
- (ii) Individuals: Excluding companies. Residents assessed both in Tasmania and at Central Office, also non-residents assessed in Tasmania.
- (iii) Taxable Income: Actual income *less* exempt income and allowable deductions.

Companies (Income Tax and Social Services Contribution)

The tax payable by companies for the financial year 1963-64 is based on income derived during the year ended 30th June, 1963 or substituted accounting period. (In the case of tax on individuals, however, financial year and income year are usually synonymous.)

The following table shows the rates of tax and contribution payable by companies for the financial year, 1963-64:

**Rates of Income Tax and Social Services Contribution
Companies—Financial Year, 1963-64**

Scale	Taxable Income	
	Up to \$10,000	Balance
	Cents per \$	Cents per \$
A	25	35
B	30	40
C	35	40
D	30	30

The following shows the application of the above scales to the various types of company:

- Private:* (A) except that 50 cents in the \$ was payable on the undistributed amount.
- Co-operative:* (B).
- Life Assurance:* If purely mutual (A). Other Life Assurance (if resident), mutual income (A); other income (C) except that maximum other income subject to 35 cent rate is \$10,000 less mutual income; if non-resident, mutual income (A), dividend income (B), other income (C) except that maximum dividend income subject to 30 cent rate is \$10,000 less mutual income, and maximum other income subject to 35 cent rate is \$10,000 less the sum of dividend and mutual income.
- Non-Profit:* Friendly Society Dispensary (D); other (B).
- Other Companies:* Resident (C); non-resident—dividend income (B), other income (C) except that maximum other income subject to 35 cent rate is \$10,000 less dividend income.
Certain types of interest payments were also subject to a tax of 40 cents in the \$.

State Taxation

In the section on Consolidated Revenue, taxes collected by the Tasmanian Government were shown in summarised form. Full details are as follows:

**Tax Collections by The State (a)
(\$'000)**

Tax	1961-62	1962-63	1963-64
Deceased Persons' Estates Duties	1,968	1,764	2,135
Entertainments Tax	276	208	53
Stamp Duties (excluding Bookmakers' Tickets)—			
Cheques	248	266	258
Bills of Exchange	2	2	1
Bills of Lading	2	2	1
Hire-Purchase Agreements	262	342	345
Legal Documents, &c.	596	716	819
Adhesive Revenue Stamps	316	358	339
Insurances	374	400	427
Racing and Gaming Taxes—			
For Consolidated Revenue	462	480	497
For Other Funds	346	338	358
Land Tax	1,094	1,258	1,554

Tax Collections by The State (a)—continued
(\$'000)

Tax	1961-62	1962-63	1963-64
Motor Taxation—			
For Consolidated Revenue	2,508	2,832	3,019
For Other Funds	570	618	686
Liquor Tax and Related Licences—			
Tax	490	500	509
Publicans' Licences, &c.	30	30	31
Wholesale Licences	42	44	46
Registration of Clubs	4	4	5
Sundry Licences—			
Animals' and Birds' Protection Act	10	12	15
Auctioneers and Estate Agents	6	6	7
Other	4	4	5
Total	9,610	10,184	11,110

(a) Collections from all sources of taxation, including amounts paid to special funds.

State Land Tax

The rates of land tax, less a 10 per cent rebate, assessed on urban unimproved land values for the year 1963-64 are shown in the following table:

Rates of State Land Tax—Urban Land, 1963-64
(\$)

Taxable Value (Selected Values) (a)	Tax Payable (b)	Taxable Value (Selected Values) (a)	Tax Payable (b)
480	1	19,200	152
960	2	28,800	272
1,920	5	48,000	552
4,800	17	72,000	977
7,200	32	96,000	1,477
9,600	52	144,000	2,677

(a) Tax on intermediate values can be calculated by simple proportion, e.g. tax on \$5,000 equals \$17 plus 200 (\$32 less \$17). Land values exceeding \$144,000 were further taxed at 2.9166 cents (3½d.) in the \$ on the excess. The minimum tax payable was \$1.00.

(b) Subject to a 10 per cent rebate not applied to the table values.

The rates of land tax, less a 10 per cent rebate, assessed on rural land values for the year 1963-64 are shown in the following table:

Rates of State Land Tax—Rural Land, 1963-64

Unimproved Value	Taxable Value	Tax Rate (a)
\$		
1- 9,600	Nil	Nil
9,600-14,400	Three times the unimproved value less \$28,800	As for Urban land
14,401 and over	Unimproved value	As for Urban land

(a) Subject to a 10 per cent rebate.

The following table summarises the value of urban, rural and composite properties and the tax assessed on each:

State Land Tax—Value of Properties and Tax Assessed
(*\$'000*)

Year	Gross Unimproved Value				Tax Assessed			
	Urban	Rural	Compo- site (a)	Total	Urban	Rural	Compo- site (a)	Total
1959-60	108,052	58,472	12,504	179,028	764	128	132	1,024
1960-61	112,288	59,532	14,110	185,930	790	120	154	1,064
1961-62	119,566	59,346	14,612	193,524	820	122	164	1,106
1962-63	134,012	65,976	16,020	216,008	958	126	182	1,266
1963-64	174,826	80,092	16,712	271,630	1,320	112	178	1,610

(a) Properties made up of both urban and rural land.

Deceased Persons' Estates Duties

The legislation dealing with State Deceased Persons' Estates Duties is contained in Acts No. 42 of 1957 and No. 62 of 1962. The following table gives details of assessments for 1963-64:

State Deceased Persons' Estates Duties
Number of Estates, Net Value and Tax Assessed, 1963-64

Net Value of Estate	Estates		Net Value as Assessed	Total Duty Assessed (a)	Average Duty	
	Number Examined	Number Taxable			Per Estate Examined	Per Taxable Estate
\$	No.	No.	\$'000	\$'000	\$	\$
2- 500 ..	104	79	22	2	17.2	22.6
502- 1,000 ..	76	48	56	4	61.2	96.8
1,002- 1,500 ..	73	37	92	4	62.4	123.2
1,502- 2,000 ..	73	33	128	4	57.8	128.0
2,002- 3,000 ..	134	58	334	12	92.2	213.2
3,002- 4,000 ..	115	35	400	10	86.8	285.0
4,002- 5,000 ..	110	72	494	17	157.6	240.6
5,002- 6,000 ..	103	66	566	14	132.8	207.2
6,002- 8,000 ..	221	126	1,534	48	216.0	378.8
8,002- 10,000 ..	129	66	1,152	38	296.6	579.8
10,002- 15,000 ..	175	122	2,118	98	561.2	805.0
15,002- 20,000 ..	77	60	1,324	67	870.8	1,117.6
20,002- 30,000 ..	84	77	2,018	136	1,619.8	1,767.2
30,002- 40,000 ..	50	50	1,710	138	2,758.2	2,758.2
40,002- 50,000 ..	27	27	1,190	114	4,207.2	4,207.2
50,002-100,000 ..	57	57	3,754	402	7,035.8	7,035.8
100,002 and over ..	24	24	4,930	1,082	45,118.0	45,118.0
Adjustments ..	..	..	..	-10	..	..
Total ..	1,632	1,037	21,822	2,180	..	..

(a) Rates of duty and levels of exemption vary according to the class of beneficiary and the type of asset contained in the estate.

Motor Taxation

The chief components of motor taxation are: (i) vehicle registration fees; (ii) motor tax assessed on a power-weight formula; (iii) drivers' and riders' licences; (iv) other registration fees mainly related to public vehicles.

Details of motor taxation collections are shown in the following table:

State Motor Taxation
(**\$'000**)

Particulars	1961-62	1962-63	1963-64
Vehicle Registration Fees	354	382	454
Motor Tax	2,152	2,480	2,662
Licences—Drivers and Riders	236	250	246
Other Registration Fees	336	338	343
Total	3,078	3,450	3,705

Racing Taxation

Under the *Racing and Gaming Act 1952*, licensed bookmakers pay a turnover commission of $2\frac{1}{2}$ per cent if fielding at a Tasmanian course or taking bets on Tasmanian events at off-course premises. Such commissions are payable, through the Racing Commission, to the racing club concerned. Bets on other Australian races at Tasmanian off-course premises require payment of a two per cent commission, such moneys going to the State. (For 1964-65, this commission was increased to $2\frac{1}{2}$ per cent, half the increased yield going to racing clubs.)

Totalisator tax at five per cent (city area) and $2\frac{1}{2}$ per cent (country) is payable to the State. Moneys payable to the State bear the administrative costs of the Racing Commission before passing to Consolidated Revenue. Details of Racing Taxation are as follows:

State Racing Taxation—Collection and Distribution
(**\$'000**)

Particulars	1961-62	1962-63	1963-64
Totalisator Tax	68	62	60
Bookmakers' Commission and Licences	598	610	648
Stamp Duty on Bookmakers' Tickets	142	146	147
Total	808	818	855
Paid into Consolidated Revenue	462	480	497
Racing Commission's Expenses	30	32	34
Stipendiary Stewards' Expenses .. .. .	..	8	11
Racing Clubs' Commission	316	298	313

The turnovers on which commissions were levied are as follows:

Betting—Bookmakers' Turnover and Totalisator Investments
(**\$'000**)

Particulars	1961-62	1962-63	1963-64
Licensed Bookmakers' Turnover	25,950	26,604	28,439
Totalisator Investments	1,422	1,282	1,260

State Taxation on Lotteries

From 1942 (when the Commonwealth Government became the sole collector of income tax), lotteries conducted from Hobart by Tattersalls (George Adams Estate) were Tasmania's chief source of revenue from State

taxation. On 14th July, 1954, the promoters transferred their operations to Victoria. A new organisation—Tasmanian Lotteries—was granted a licence and operated until 30th September, 1961, when the proprietor surrendered the licence. No operator is now licensed.

The following records the contributions made to Consolidated Revenue by lotteries taxation from 1949-50:

Taxation and Stamp Duties Imposed on Lotteries—Paid to Consolidated Revenue (\$'000)

Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties	Year	Taxation and Stamp Duties
1949-50 ..	2,152	1953-54 ..	3,032	1957-58 ..	740
1950-51 ..	2,430	1954-55 ..	1,152	1958-59 ..	432
1951-52 ..	2,634	1955-56 ..	2,114	1959-60 ..	278
1952-53 ..	2,952	1956-57 ..	1,930	1960-61 ..	60

In September, 1960, the *Racing and Gaming Act* 1952 was amended to permit agreements with other States for the sale of their lottery tickets in Tasmania. Under an agreement with the Victorian Government, Tattersalls were allowed to sell tickets through accredited Tasmanian representatives; the Victorian Government was to pay quarterly to the Tasmanian Government $15\frac{1}{2}$ per cent of the value of subscriptions made as a result of this concession. The amounts received under the agreement have been: 1960-61, \$84,876; 1961-62, \$137,914; 1962-63, \$134,476; 1963-64, \$145,394. For the purpose of Public Finance Statistics, these amounts are classified not as "taxation" but as "payments from other States".

The high level of tax yield up to 1953-54 was largely attributable to the receipt, in Tasmania, of lottery subscriptions from other Australian States and from overseas, a major contributor being New Zealand. The later decline in tax yield was attributable to the competition of Government lotteries in N.S.W., Queensland and Western Australia, and Tattersalls operating under government licence in Victoria.

Public Finance—Appendix

In general, the previous sections of Public Finance have been written to end with 1963-64 transactions, or with balances and aggregates at 30th June, 1964. The main statistics for 1964-65 were as follows (in \$'000): Consolidated Revenue, receipts, 74,846; expenditure, 76,465; Net Loan Expenditure, 33,352; Aggregate Net Loan Expenditure to 30th June, 518,860; State Public Debt (at 1927 exchange rates), 462,302. Principal items of Consolidated Revenue receipts were (in \$'000): Commonwealth grants, 44,431; State taxation, 10,677; debt charge recoveries, 14,425; and departmental revenue, 3,174.

PRIVATE FINANCE

Decimal Currency

Early Currency

In N.S.W. in 1800, Governor King issued a proclamation relating to the official value of the many forms of currency in circulation in the colony and attached to it a "table of specie" as follows:

Governor King's Table of Specie, 1800

Currency Unit	Sterling Equivalent	Currency Unit	Sterling Equivalent
	£ s. d.		£ s. d.
A Guinea	1 2 0	A Spanish Dollar	0 5 0
A Johanna	4 0 0	A Rupee	0 2 6
An Half Johanna	2 0 0	A Dutch Guilder	0 2 0
A Ducat	0 9 6	An English Shilling	0 1 1
A Gold Mohur	1 17 6	A Copper Coin of One Ounce	0 0 2
A Pagoda	0 8 0		

Since Van Diemen's Land was colonised three years later as an extension of N.S.W., it followed that the same diverse forms of currency were soon in circulation in the Derwent and Tamar settlements. In 1813 in Sydney, Governor Macquarie, by proclamation, originated the "holey dollar" and the "dump"; the former, a silver dollar with the centre struck out, was officially valued at five shillings; the latter, being the struck out portion, was valued at fifteen pence. By 1822, full value dollars (i.e. without extraction of the dump) were being used extensively for cash transactions and there was considerable local agitation for the adoption of the dollar as the official currency. Nevertheless, a further 144 years were to pass before a dollar unit replaced the pound.

In 1825, the British Government issued an Order-in-Council with the object of bringing the dual-currency to an end and insisting on the sole use of English currency in the Australian colonies. The adoption of sterling nomenclature and of English coins proceeded gradually and special efforts were made to assure an adequate supply of the official coins. These were imported in sufficient quantity to have displaced dollars and other foreign coins by the 1830's in N.S.W., and by the 1840's in Tasmania; from then on, English gold, silver and bronze coins, including gold sovereigns and half-sovereigns minted in Australia after 1855, were in use as the official currency until early in the present century.

After Federation in 1901, the only coins which were legal tender within Australia until 1909 were English coins. Subsequently, coins produced for the Commonwealth Treasury under the *Coinage Act*, and carrying Australian identification, were ordered, in the main, from the Royal Mint, London and its branches in Melbourne, Sydney and Perth, although some orders were filled by mints in the U.S.A. and India. In connection with the making of these Australian coins, the Commonwealth Government was simply a commercial customer concerned with the quality and cost of its orders, and it exercised no control over the operations of British mints established on Australian soil (at Sydney in 1855, Melbourne 1872, and Perth 1899).

The construction of the Royal Australian Mint in Canberra provided the Commonwealth Government for the first time with facilities for minting its own coinage; the Mint was opened by H.R.H. the Duke of Edinburgh on 22nd February, 1965. The first task of the new establishment was to produce coins for issue on the changeover to decimal currency in February, 1966.

Changeover to Decimal Coinage

On 14th February, 1966 the following £-s.-d. coins were in circulation: 2s., 1s., 6d., 3d., 1d. and $\frac{1}{2}$ d. On this date, the following new coins were put into circulation: 50 cents (equal to 5s.), 20 cents (2s.), 10 cents (1s.), 5 cents (6d.), 2 cents (2.4d.) and 1 cent (1.2d.). It is provided that coins, both "new" and "old", may circulate side by side for a period of two years, the plan being to withdraw "old" coins through the banks.

Changeover to Decimal Notes

Notes in circulation in Australia are issued by the Reserve Bank through the Note Issue Department. The Bank had authority to issue Australian notes in denominations of 5s., 10s., £1, £5, £10 and any multiple of £10. The Reserve Bank is not required to hold a specific reserve in gold against the note issue, but the assets of the Note Issue Department must be held or invested in gold, on deposit with any bank, or in securities of the Government of the U.K., the Commonwealth, or a State. Under the *Reserve Bank Act 1959*, the profits of the Note Issue Department are paid to the Commonwealth.

Australian notes are legal tender to any amount within Australia and have been issued in denominations of 10s., £1, £5, £10, £20, £50, £100, and £1,000. Notes of denominations higher than £10 have not been issued to the public since 1945.

On 14th February, 1966, the following notes were in general circulation: 10s., £1, £5 and £10. On this date, the following new notes were put into circulation: \$1 (equal to 10s.), \$2 (£1), \$10 (£5) and \$20 (£10). Although the decimal notes were completely new in design, the colours were arranged to establish at a glance the relationship between new and old (brown \$1; green \$2; blue \$10; red \$20). No issue was made of a \$5 note at this point in time since there was no single note equivalent (£2-10s.) in the £-s.-d. system. It is provided that notes, both "old" and "new", may circulate side by side for a period of two years, the plan being to withdraw "old" notes through the banks.

The background to this changeover to a decimal currency is given in the section that follows.

Developments Prior to Currency Act 1963

The Decimal Currency Committee was appointed by the Commonwealth Government in February, 1959, to investigate the advantages and disadvantages of a decimal currency; if a decimal currency were favoured, to make recommendations concerning the unit of account, the method of introduction and the cost involved.

In April, 1963, the Government announced that, in accordance with the recommendations of the Decimal Currency Committee:

- (a) a system of decimal currency was to be introduced into Australia;
- (b) the tentative changeover date was set for February, 1966;
- (c) the new system would be based on a major unit (subsequently named the dollar) equal to the present ten shillings;
- (d) the minor unit (subsequently named the cent) of the new system would be one hundredth part of the major unit, and would thus be equal in value to 1.2d. in the existing currency system; and
- (e) no fractions of the minor unit would be introduced.

The Government also announced that it would pay reasonable compensation to owners of a large proportion of monetary machines which required conversion in order to be used in the new decimal system.

Currency Act 1963

The *Currency Act 1963* of the Commonwealth Parliament provided for the new currency and established the relationship between it and the existing system of pounds, shillings and pence, and specified the denominations and minting and legal tender arrangements for the new decimal coins. The Act also furnished the Treasurer with certain powers for the purpose of facilitating

the transition from the existing to the decimal currency system, and established the Decimal Currency Board. The transition day—"C-day"—was established as 14th February, 1966.

Using the relationships established in the *Currency Act* 1963, the Decimal Currency Board has published three conversion tables:

- (a) an Exact Equivalents Table;
- (b) a Banking and Accounting Table; and
- (c) a Comprehensive Conversion Table.

The Exact Equivalents Table converts amounts of £-s.-d. to their exact values in dollars and cents. This table is for use whenever it is necessary to obtain the exact equivalent of an amount of £-s.-d. in the new currency. (Many industrial agreements providing for hourly wage rates have been converted in terms of exact equivalent values.)

The Banking and Accounting Table converts amounts of £-s.-d. to the nearest whole-cent. This table is for use when it is practicable only to convert to whole-cents. The Comprehensive Conversion Table converts amounts ending in halfpence to the nearest whole-cent.

Neither of the Board's whole-cent conversion tables is in any sense designed to give direction as to how prices in £-s.-d. should be converted to dollars and cents. The Board has no authority to fix prices or other charges.

Notation in Decimal Currency

The Board has made certain recommendations on the method of writing amounts in decimal currency.

The main guiding rules are:

- (a) the symbol for the dollar is \$, a capital S with two vertical strokes; acceptable alternatives may be used, for example, an S crossed by one vertical stroke;
- (b) the symbol for the cent is a small letter c; again acceptable alternatives may be used, for example, a c with a stroke through it or some stylised version of the c;
- (c) where it is necessary to distinguish the Australian dollar from overseas currencies, the letter A should be placed immediately after the dollar sign, \$A;
- (d) when using the dollar symbol and writing amounts involving cents, there should always be two figures (where necessary one of them a nought) following the decimal point, e.g. \$26.09;
- (e) when using the dollar symbol and writing amounts of cents only, a nought should be placed between the symbol and the decimal point, e.g. \$0.25; and
- (f) in line with a strong preference expressed by the Australian banks, a hyphen should be used, instead of a decimal point, to separate figures for dollars and cents in an amount hand-written on a cheque, e.g. \$26-09.

Decimal Currency Act 1965

In 1965, the Tasmanian Parliament passed the *Decimal Currency Act* to give official recognition to the new currency and to specify what conversions should apply after 14th February, 1966 in respect of amounts originally expressed in £-s.-d. currency in previous legislation, contracts, agreements, &c.

Banking in Tasmania

Types of Bank

Banks in Tasmania can be classified by ownership as follows: (i) Government—the Reserve Bank of Australia, the Commonwealth Development Bank of Australia, the Commonwealth Trading Bank of Australia, and the Commonwealth Savings Bank; (ii) Private—the private trading banks and the private savings banks; (iii) Trustee—the Hobart and the Launceston Savings Banks. (It should be noted that the Agricultural Bank is *not* a bank for the purpose of the statistics that follow.)

For statistical purposes, such a classification is not helpful since banks, both government and private, may be engaged in the same type of activity. Hence, the classification in actual use is one which groups banks according to their type of activity, not according to their ownership. The major banking statistics for the State are presented in two distinct series under the following headings: (i) all cheque-paying banks; (ii) all savings banks.

Cheque-Paying Banks

The following institutions in Tasmania are classified as "cheque-paying banks": Commonwealth Trading Bank of Australia; Australia and New Zealand Bank Ltd.; Bank of New South Wales; Commercial Bank of Australia Ltd.; Commercial Banking Company of Sydney Ltd.; English, Scottish and Australian Bank Ltd.; and National Bank of Australasia Ltd. (This does not exhaust the list of cheque-paying banks operating in Australia but only these seven enterprises maintain branches in Tasmania.)

Savings Banks

In the 1950's, only three savings banks operated branches in Tasmania: Hobart Savings Bank, Launceston Savings Bank and Commonwealth Savings Bank. (The trustee savings banks date from early colonial days, that at Launceston opening in 1835, and at Hobart in 1845.) In recent years, a number of private trading banks have opened savings bank subsidiaries in the State, the relevant dates being A.N.Z., September, 1959; Bank of N.S.W., September, 1961; E. S. & A., October, 1961; National, May, 1962; Commercial (of Australia), July, 1962; Commercial (of Sydney), March, 1963. In effect, all those banks which previously operated in Tasmania purely as cheque-paying banks now make available facilities for savings depositors. It follows that there are nine separate enterprises operating branches within the State.

Banking Legislation

Under Section 51 of the Commonwealth Constitution, the Commonwealth Parliament has power to legislate with respect to "banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money". The principal Commonwealth Acts at present in force relating to banking are as follows:

The Reserve Bank Act 1959: Provision for the constitution and management of the Reserve Bank of Australia and the management of the Australian note issue. (Central banking functions had previously been vested in the Commonwealth Bank of Australia.)

The Banking Act 1959: Objects are (i) to provide a legal framework uniform throughout Australia for regulating the banking system; (ii) to safeguard depositors of the banks from loss; (iii) to provide for the co-ordination of banking policy under the direction of the Reserve Bank; (iv) to control the volume of credit in circulation and bank interest rates; (v) to mobilise and to provide machinery for the control of foreign exchange and the gold resources of the Australian economy.

The Commonwealth Bank Acts 1959-1961: These Acts created the Commonwealth Banking Corporation as the controlling body for the newly-constituted Commonwealth Trading Bank of Australia, Commonwealth Savings Bank of Australia and Commonwealth Development Bank of Australia. The Corporation and its constituent banks are subject to the same banking controls as are the private trading banks. (The Commonwealth Bank, established in 1911, had performed a number of diverse roles, e.g. as a trading bank, a savings bank and a central bank. The effect of the new legislation was to isolate the individual functions and to constitute a separate establishment for each.)

Transactions of Cheque-Paying Banks

The accompanying table summarises the principal statistics relating to all cheque-paying banks in Tasmania for a five-year period. The following definitions apply:

- (i) Deposits—an item among banks' liabilities. The figure is the average, for the year, of balances read at weekly intervals.
- (ii) Loans, Advances and Bills Discounted, &c.—an item among banks' assets. The figure is the average, for the year, of balances read at weekly intervals.
- (iii) Debits to Customers' Accounts—in general, mainly the total of all cheques drawn by customers during a given period. The figure is the weekly average of such entries for the year.

A marked change is apparent in the proportion of funds held as "Deposits: Not Bearing Interest." In June, 1961, this liability item accounted for 71.0 per cent of total deposits in Tasmanian cheque-paying banks; in the same month of 1962, for 67.6 per cent; in June, 1963, for 66.7 per cent; June, 1964, for 65.2 per cent; and June, 1965, for 61.5 per cent. In the table (based on annual weekly averages), interest-bearing deposits have almost doubled whereas non-interest bearing deposits have varied only in a minor degree.

All Cheque-Paying Banks
(Including Commonwealth Trading Bank)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Branches in Tasmania, End of Period	No. 85	No. 94	No. 95	No. 98	No. 101
Weekly Averages—	\$'000	\$'000	\$'000	\$'000	\$'000
Deposits—					
Commonwealth and State Governments	465	520	510	492	580
Other—					
Fixed	15,420	20,768	23,074	24,046	29,483
Current—Interest Bearing	3,985	4,314	4,725	4,966	5,481
Current—Not Bearing Interest	57,608	53,492	54,875	56,710	59,059
Total	77,478	79,094	83,184	86,214	94,603
Loans, Advances and Bills Discounted (a)	48,944	49,334	53,186	55,106	54,124
Debits to Customers' Accounts (b)	32,472	32,080	35,068	37,062	41,340

(a) Excludes loans to authorised dealers in the short-term money market.

(b) Excludes debits to Australian Government accounts at Hobart branches. In addition to the seven cheque-paying banks' transactions, those of the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank are included in this item.

Fixed Deposit Rates

The next table shows the interest rates received by customers of cheque-paying banks in respect of money lodged on fixed deposit for specified periods:

Cheque-Paying Banks—Fixed Deposit Rates
(Per Cent Per Annum)

Date From Which Operative	Deposits for			
	Three Months and Under Six	Six Months and Under Twelve	Twelve Months	Twenty-four Months
15th March, 1956	2.25	2.50	2.75	3.00
4th December, 1956	2.25	2.50	2.75	3.50
17th November, 1960	(a) 4.00		4.50	(b)
1st July, 1961	(a) 4.00		4.25	(b)
13th April, 1962	(a) 3.75		4.00	(b)
1st April, 1963	(a) 3.25		(c) 3.50	(c)
8th April, 1964	(d) 3.75		(c) 4.00	(c)
29th September, 1964	(d) 3.75		(e) 4.00	(f) 4.25
3rd March, 1965	(d) 4.25		(e) 4.50	(f) 4.50

(a) Three months but less than twelve months.

(b) The maximum period for fixed deposits was 12 months.

(c) From 10th September, 1962, deposits could be accepted for up to 15 months.

(d) From 8th April, 1964, fixed deposits exceeding \$100,000 for periods from one to three months could be accepted at the rates shown.

(e) As from 29th September, 1964, deposits could be accepted for periods from 12 to 18 months.

(f) Over 18 months to 24 months.

The above rates (as from 3rd March, 1965) were still in force in May, 1966.

Transactions of Savings Banks

The following table summarises the principal statistics relating to savings banks in Tasmania. Deposits are compiled on a basis different from that used in the case of cheque-paying banks. "Deposits lodged" is the total inflow of deposits during the year, and "depositors' balances" is a single liability reading taken at the end of the year.

All Savings Banks

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Number at End of Period—	No.	No.	No.	No.	No.
Branches in Tasmania ..	64	110	135	141	147
Operative Accounts ..	316,794	331,847	349,676	362,999	379,243
Deposits Lodged during Year	\$'000 90,056	\$'000 96,566	\$'000 109,688	\$'000 125,316	\$'000 142,382
Interest Added during Year ..	2,868	3,316	3,638	3,530	4,108
Excess of Deposits over With- drawals	— 802	4,368	6,758	8,384	6,854
Depositors' Balances—End of Year	94,776	102,460	112,856	124,770	135,732
Per Head of Population—	\$	\$	\$	\$	\$
Depositors' Balances—End of Year	271	287	312	339	367

Savings Bank Interest Rates

The next table shows rates of interest applying to operations of the Hobart Savings Bank, firstly as received by depositors, and secondly, as charged to borrowers with home mortgages.

Hobart Savings Bank—Interest Rates
(Per Cent Per Annum)

Date of Change in Rate	Interest Rate—Maximum Upon Deposits (a)	Mortgage Rate on Advances for Homes	Date of Change in Rate	Interest Rate—Maximum Upon Deposits (a)	Mortgage Rate on Advances for Homes
1st Jan., 1955	2.75	4.75	1st July, 1961	3.75	5.75
1st March, 1956	3.00	5.00	1st Aug., 1962	3.75	6.00
1st April, 1957	3.00	5.25	1st April, 1963	3.25	6.00
1st Nov., 1957	3.00	5.50	1st May, 1963	3.25	5.50
1st Nov., 1958	3.25	5.50	1st June, 1964	3.50	5.50
1st Jan., 1961	3.50	5.75	1st April, 1965	3.75	5.75

(a) Deposits are savings accounts; interest on fixed deposits is as for cheque-paying banks.

The rates effective from 1st April, 1965, were still in operation in May, 1966.

Insurance in Tasmania*Definitions*

The data on insurance that follow are divided into two parts: (i) life insurance; (ii) insurance other than life, i.e. fire, marine and general insurance. In connection with life policies, it is common to make a distinction between "assurance" and "insurance"; for the purpose of the section that follows, including the tables, no such distinction is observed and the term "insurance" is used throughout.

Legislation

Section 51 of the Commonwealth Constitution confers the necessary powers on the Commonwealth Parliament to legislate with respect to "insurance other than State insurance; also State insurance extending beyond the limits of the State concerned." The principal Commonwealth legislation affecting current insurance business is as follows:

Insurance Act 1932-1960: Insurance businesses are required to lodge a deposit with the Commonwealth Treasurer, interest on the invested deposit being paid to the depositor. Deposits remain as a security against liability to policy holders, and are available to satisfy judgments obtained in respect of policies. The following insurance business is exempted from these provisions: staff superannuation schemes; schemes of religious organisations purely for insurance of their property; friendly society, union and association schemes involving superannuation or insurance benefits to employees. Deposits with a State made prior to the legislation could remain with the State and reduce the amount needed for deposit with the Commonwealth. The passing of the *Life Insurance Act 1945-1961* had the effect of adding life insurance business to the list of activities exempted from the provisions of the *Insurance Act 1932-1960*.

Life Insurance Act 1945-1961: Objects are (i) to replace all State legislation on the subject of life insurance, except that relating to operations of a State insurance office within a specific State, and to provide uniform legislation for the whole of Australia; (ii) to appoint an Insurance Commissioner to exercise active supervision of the activities of life insurance companies, with a view to

securing the greatest possible protection of policy holders; (iii) to set up adequate machinery for dealing with any company that fails to maintain a required minimum standard of solvency.

Life Insurance

Since 1947, returns lodged under the *Life Insurance Act 1945-1961* have been used to compile life insurance statistics. In Tasmania, the Government Insurance Office does not transact life business so the tables that follow refer to the operations of enterprises exclusively in the private sector. The following summarises the principal statistics relating to life insurance business carried on in Tasmania:

Life Insurance Transactions

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
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ORDINARY BUSINESS (a)

New Policies Issued (b)—					
Policies (No.)	16,046	14,216	14,444	15,845	14,611
Sum Insured .. (\$'000)	53,352	50,322	55,602	64,588	65,584
Annual Premiums .. (\$'000)	N.A.	N.A.	1,363	1,474	1,633
Policies Discontinued (b)—					
Policies (No.)	10,301	11,673	11,494	12,775	13,192
Sum Insured .. (\$'000)	21,600	23,719	25,748	30,030	30,537
Annual Premiums .. (\$'000)	N.A.	N.A.	699	764	815

INDUSTRIAL BUSINESS (c)

New Policies Issued (b)—					
Policies (No.)	4,066	3,309	3,272	3,538	3,077
Sum Insured .. (\$'000)	2,100	1,902	2,464	2,794	2,682
Annual Premiums .. (\$'000)	N.A.	N.A.	102	106	103
Policies Discontinued (b)—					
Policies (No.)	8,337	7,917	7,261	6,513	6,530
Sum Insured .. (\$'000)	1,998	1,873	1,960	2,010	1,959
Annual Premiums .. (\$'000)	N.A.	N.A.	92	89	91

NEW LOANS GRANTED (d)

On Mortgage of Real Estate (\$'000)	5,242	3,204	2,720	3,024	3,132
On Companies' Policies (\$'000)	906	814	862	922	930
On Other Securities .. (\$'000)	18	24	112	4	12
Total Loans Granted (\$'000)	6,166	4,042	3,694	3,950	4,074

(a) Includes superannuation business and "group insurance".

(b) Excludes annuities.

(c) Industrial business refers, in the main, to policies on which the premiums are collected as regular instalments by agents on commission.

(d) Excludes advances of premiums.

The next table shows, for Tasmania, the number of policies in force and the amount of the sum insured:

Life Insurance—Policies in Force at 31st December

Particulars	1961	1962	1963	1964	1965
Policies (No.)	216,248	214,612	214,646	213,462	(a)
Sum Insured (\$'000)	304,104	332,092	360,388	396,251	(a)

(a) Not yet available.

Fire, Marine and General Insurance

Definitions: The following statistics, which are in respect of the business of companies operating in Tasmania, and of the State Government Insurance Office, conform to these definitions:

- (i) Premiums represent the full amount receivable in respect of policies issued and renewed in the year, less returns, rebates and bonuses paid or credited to policy-holders during the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts differ from "earned premium income" appropriate to the year. When business is increasing, as shown in the statistics, premiums receivable are greater than "earned premium income" appropriate to the year. The converse applies when business is declining.
- (ii) Claims or losses include provision for outstanding claims and represent claims or losses incurred in the year. Salvage and other amounts recoverable have been deducted.
- (iii) Contributions to fire brigades, commission and agents' charges, and expenses of management represent mainly charges paid during the year.
- (iv) Taxation represents mainly payments made during the year, and includes income tax, pay-roll tax, licence fees, stamp duty (where paid by the Company), &c. Income tax paid during the year is based on the income of earlier years.

The figures relate to selected items of statistics and are not construable as "Profit and Loss" statements or "Revenue Accounts". In cases where the business is underwritten in one State and the risk is situated in another, the business is included in the State in which the policy was issued.

Fire, Marine and General Insurance
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Premiums (Less Returns, Rebates and Bonuses)	9,846	10,212	11,428	12,248	13,567
Interest, Dividends, Rents	144	106	162	230	264
Total Revenue	9,990	10,318	11,590	12,478	13,831
Claims (Less Amounts Recoverable)	5,520	5,494	5,950	6,664	7,854
Other Expenditure	4,000	4,082	4,412	4,610	(a) 5,185
Total Expenditure	9,520	9,576	10,362	11,274	13,039

(a) Contribution to Fire Brigades, \$230,000; commission and agents' charges, \$1,600,000; expenses of management, \$2,662,000; taxation, \$692,000.

Types of Insurance: The next table shows premiums and claims according to the class of insurance business transacted in 1964-65. ("Premiums" and "claims" have been compiled in accordance with the definitions introducing the section.)

Premiums and Claims for Each Type of Insurance, 1964-65
(*\$'000*)

Class of Business	Premiums	Claims	Class of Business	Premiums	Claims
Fire	2,567	851	Public Risk, Third Party	188	127
Householders' Comprehensive	855	217	General Property	49	14
Sprinkler Leakage	3	1	Plate Glass	67	38
Loss of Profits	251	79	Boiler	7	(b)
Hailstone	(a)	(a)	Livestock	22	7
Marine	552	228	Burglary	174	113
Motor Vehicles	4,435	3,032	Guarantee	24	23
Motor Cycles	(b)	1	"Pluvius"	17	8
Compulsory Third Party (Road Accidents)	1,316	1,122	Aviation	17	18
Workers' Compensation	2,295	1,233	All Risks	66	31
Seamen's Compensation	(a)	(a)	Television	11	5
Personal Accident	421	186	Other	230	520
			Total	13,567	7,854

(a) Not available for publication. Listed in "Other".

(b) Under \$500.

Ratio of Claims to Gross Premiums: The following table shows, as a percentage, the ratio between claims and premiums for the more important classes of business over a five-year period:

Fire, Marine and General Insurance
Ratio of Claims to Premiums (a)
(Per Cent)

Class of Business	1960-61	1961-62	1962-63	1963-64	1964-65
Fire	46.2	29.5	34.0	30.6	33.1
Householders' Comprehensive	20.9	24.6	23.3	21.5	25.4
Loss of Profits	63.7	29.3	33.9	1.7	31.4
Marine	54.2	59.9	60.4	66.0	41.3
Motor Vehicles (Excluding Motor Cycles)	66.2	59.5	64.0	72.3	68.4
Compulsory Third Party (Road Accidents)	64.0	65.9	58.7	75.1	85.3
Workers' Compensation	51.1	60.1	52.6	49.2	53.7
Personal Accident	43.4	51.7	45.7	48.1	44.2
Public Risk, Third Party	116.7	58.9	20.8	38.2	67.7
Plate Glass	71.4	78.7	48.1	50.9	57.2
Burglary	62.6	59.4	54.1	70.7	65.2
All Classes	56.1	53.8	52.1	54.4	57.9

(a) See beginning of section for definition of claims and premiums.

Instalment Credit for Retail Sales in Tasmania

General

Information relating to instalment credit for retail sales in Tasmania is given in the following tables. Monthly and quarterly statements are issued by the Bureau.

The statistics cover operations of all types of instalment credit schemes which relate primarily to the financing of retail sales of goods, whether the credit is advanced by a retail business or by a non-retail finance business. In general, the term "instalment credit" is defined as relating to schemes in which repayment is made by regular pre-determined instalments. Types of schemes covered include hire purchase, time payment, budget account, and personal loan schemes which relate primarily to financing of retail sales of goods. In these statistics, the term "retail sales" relates not only to retail sales by retail establishments coming within the scope of the Censuses of Retail Establishments conducted periodically by the Bureau, but includes also other sales of goods to final purchasers (e.g. plant and machinery).

Figures for amounts financed *exclude* interest, hiring charges, insurance, &c. Figures for balances outstanding and collections *include* interest, hiring charges, insurance, &c. Details are not available of these charges or of other items (e.g. rebates allowed for early payment, late payment charges, bad debts written off) which affect the reconciliation of the three main instalment credit series—amounts financed, collections and balances outstanding.

Instalment Credit for Retail Sales (a)
(Hire Purchase and Other Instalment Credit)
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
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FINANCED BY RETAIL BUSINESSES

Amount Financed During Period (b)—					
Motor Vehicles—New (c) ..	n.a.	190	342	376	378
Used (c) ..	n.a.	170	206	238	210
Total Vehicles ..	398	360	548	614	588
Plant and Machinery ..	72	28	38	54	32
Household and Personal Goods	5,928	5,650	5,812	5,288	5,018
Total All Goods ..	6,398	6,038	6,398	5,956	5,638
Balances Outstanding at End of Period (d)	7,774	8,826	9,732	9,260	8,596

FINANCED BY NON-RETAIL FINANCE BUSINESSES

Amount Financed During Period (b)—					
Motor Vehicles—New (c) ..	n.a.	5,322	6,672	7,776	8,314
Used (c) ..	n.a.	7,336	8,852	9,580	9,152
Total Vehicles ..	12,404	12,658	15,524	17,356	17,466
Plant and Machinery ..	1,376	1,296	1,468	1,326	2,232
Household and Personal Goods	4,172	3,992	4,830	3,750	3,956
Total All Goods ..	17,952	17,946	21 822	22,432	23,654
Balances Outstanding at End of Period (d)	26,512	26,854	30,718	33,048	35,640

Instalment Credit for Retail Sales (a)
(Hire Purchase and Other Instalment Credit)—continued
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
FINANCED BY ALL BUSINESSES					
Amount Financed During Period (b)—					
Motor Vehicles—New (c) ..	n.a.	5,512	7,014	8,152	8,692
Used (c) ..	n.a.	7,506	9,058	9,818	9,362
Total Vehicles ..	12,802	13,018	16,072	17,970	18,054
Plant and Machinery ..	1,448	1,324	1,506	1,380	2,264
Household and Personal Goods	10,100	9,642	10,642	9,038	8,974
Total All Goods ..	24,350	23,984	28,220	28,388	29,292
Balances Outstanding at End of Period (d)—					
Hire Purchase	26,760	27,500	31,800	34,422	36,520
Other Instalment Credit ..	7,526	8,180	8,650	7,886	7,716
Total	34,286	35,680	40,450	42,308	44,236

(a) Includes time payment, budget account and personal loan schemes associated primarily with financing of retail sales of goods.

(b) Excludes hiring charges, interest and insurance.

(c) Includes tractors.

(d) Includes hiring charges, interest and insurance.

Friendly Societies

Scope

The details that follow refer to "Ordinary" Societies, not to "Special" Societies. Ordinary Societies are those which provide customary sick and funeral benefits and are subject to actuarial valuation. Special Societies restrict their membership to employees of industrial parent organisations and are not subject to actuarial valuation.

Membership

Friendly Societies were obviously a form of social organisation to help members meet the costs of sickness, burial, &c. at a time when government social services were either meagre or non-existent. Membership reached a maximum (over 20,000 in male lodges) in the pre-depression years but has since steadily declined.

The principal benefits provided by Friendly Societies include sick pay, medical attendance and medicine, and sums payable on death; the total membership of Friendly Societies in Tasmania is under 6,000 but as certain benefits are granted to members' families as well as to members themselves, this figure must be more than doubled to arrive at an estimate of the number of persons who may receive some direct benefit, even when due allowance is made for young and unmarried members.

The most striking long-term characteristics of Friendly Societies in Tasmania are the decline in their membership and the increase in the average age of members. The following table shows the percentage age distribution since 1920:

Friendly Societies—Percentage Distribution, in Age Groups, of Members of Male Lodges

Age Group in Years	Percentage of Total Membership in Each Age Group					
	1920	1930	1940	1950	1960	1964
16-19	7.79	6.60	2.87	1.48	0.15	0.32
20-29	26.42	23.08	16.87	10.29	1.89	0.81
30-49	47.85	43.37	39.71	37.73	26.11	19.66
50-69	16.54	23.56	32.91	38.28	47.76	51.67
70 and over ..	1.40	3.39	7.64	12.22	24.09	27.54
Total ..	100.00	100.00	100.00	100.00	100.00	100.00

The next table gives details of total membership and average age:

Friendly Societies—Total Membership and Average Age of Members of Male Lodges

Particulars	1920	1930	1940	1950	1960	1964
Total Members (No.)	20,605	22,168	18,854	14,677	7,571	5,657
Average Age (Years)	36.7	40.5	45.3	49.8	58.0	60.0

The period covered by the two previous tables has witnessed a marked extension of social service and health service benefits provided by the Commonwealth Government, (e.g. sickness and funeral benefits; also hospital and medical benefits). From the 1950's onwards, there has been a rapid development of various insurance schemes to protect families against the incidence of costs associated with sickness and hospitalisation; such schemes have evolved, in general, outside the framework of the Friendly Society movement. It is probable, therefore, that there may be some causal connection between these developments and the decline in Friendly Society membership.

Revenue and Expenditure

The following table shows the net revenue and expenditure of Friendly Societies for the year 1964:

Friendly Societies—Net Revenue and Expenditure, 1964 (a)
(£)

Revenue			Expenditure		
Particulars	Total	Per Financial Member	Particulars	Total	Per Financial Member
Members' Contributions (b) ..	39,374	6.88	Medical Attendance and Medicine ..	4,480	0.78
Interest, Rent and Dividends ..	75,678	13.22	Sick Pay ..	19,396	3.39
All Other Income ..	11,818	2.07	Funeral Benefits—		
			Members ..	44,130	} 8.13
			Registered Wives	2,400	
			Administration ..	30,362	
			Other ..	10,490	1.83
Total ..	126,870	22.17	Total ..	111,258	19.44

(a) Excludes inter-fund transfers and transfers between districts and lodges.

(b) Includes levies.

In the previous table, transactions involving Friendly Societies as agents for Hospital Benefits or Medical Benefits Insurance Schemes have been eliminated.

Accumulated Capital

Accumulated capital of ordinary societies by the end of 1964 amounted to \$1,372,312 and the capital per financial member was \$239.79. The rate of interest earned by the funds was 5.57 per cent for 1964. The following table shows the growth of the capital of Friendly Societies since 1920, together with the capital per financial member:

**Friendly Societies' Accumulated Capital
(\$)**

At 31st December	Capital		At 31st December	Capital	
	Total	Per Financial Member		Total	Per Financial Member
1920	549,194	26.23	1950	1,231,486	82.41
1930	819,372	36.62	1960	1,390,122	182.62
1940	989,328	50.91	1964	1,372,312	239.79

Legislation

Provisions for the registration and control of Friendly Societies in Tasmania are embodied in the *Friendly Societies Act* 1888 as amended. Under the Act, both the Registrar of Friendly Societies and the Statistician are required to report annually to the appropriate Minister on the proceedings and transactions of the Societies; in particular, the Statistician is required to prepare an annual report on the finances of the Societies for presentation to the Parliament.

Registered Building Societies

Types of Registered Society

There are two distinct types of building society registered under Tasmanian law, specifically (i) permanent, and (ii) terminating.

Permanent Societies: These societies are both savings and deposit receiving institutions which advance funds for home building against the security of first mortgages. Those who invest by taking shares or by making deposits are in a separate category from those who borrow to build a home—in other words, applicants for loans need not be a member of, or a depositor with, the society.

Terminating Societies: These societies are those which, by their rules, are to terminate at a fixed date, or when a result specified in their rules is attained. Societies issue members one class of share, and require equated monthly instalments towards share capital from members; when a member borrows to build (and only a member may borrow), he is required to pay additional equated monthly instalments, such addition constituting interest only. The regular instalments in respect of share capital are calculated to amount, with interest, to the nominal amount of the member's shares over the life of the society (say 26 or 30 years). If the member takes out shares with a nominal value of \$6,000, then his borrowing ceiling is set at \$6,000—in other words, the member takes out, in nominal share capital, the amount which he wishes to borrow for home-building. In effect, the member is contributing to a sinking fund for the liquidation of his loan.

The terminating societies receive Commonwealth-State housing loans periodically (through the Agricultural Bank as agent for the Commonwealth), and supplement this with loans from private institutions.

Summary of Transactions

In the table that follows, the details cover the operation of both types of building society.

Registered Building Societies

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
	No.	No.	No.	No.	No.
Operative Societies	25	37	42	47	54
Shareholders	9,946	10,594	11,248	11,938	12,933
Borrowers	4,019	4,366	4,397	5,074	5,595
	\$'000	\$'000	\$'000	\$'000	\$'000
Advances Made in Year ..	2,620	3,230	4,072	5,722	6,445
Redemption of Loans in Year ..	1,562	1,586	1,743	2,284	2,699
Liabilities—					
Paid-up Capital and Subscriptions	4,664	5,164	5,812	6,101	7,010
Deposits	4,328	5,088	6,036	8,314	9,398
Loans Due to Government Bank Overdrafts and Other Liabilities	2,700	1,392	1,604	2,469	3,662
Total	11,692	13,460	15,888	19,840	23,274
Assets—					
Advances on Mortgages ..	10,714	12,350	14,688	18,127	21,853
Other	978	1,110	1,200	1,713	1,421
Total	11,692	13,460	15,888	19,840	23,274

In the previous table, "Loans Due to Government" refers principally to loan money made available under the Commonwealth-State Housing Agreement, the amounts being exclusively the liability of the terminating building societies. In 1964-65, all but five of the operative societies were of the terminating variety.

Co-operative Societies

The next table summarises the financial transactions of societies registered under Tasmanian law as co-operative industrial societies; excluded are co-operative credit societies which are dealt with in a subsequent section.

Types of Registered Society

The co-operative societies in Tasmania embrace several types of business, examples being: (i) fish marketing; (ii) butter factory; (iii) auctioneers and general merchants; (iv) fruit pulping; (v) wholesale grocers; (vi) meat marketing; (vii) hire car base radio service. The table which summarises their operations uses the term "operating" to describe transactions concerned with the processing and sale of goods, and "non-operating" to describe earnings from commissions, discounts, services, &c.

Co-operative Societies

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
	No.	No.	No.	No.	No.
Branches	16	13	13	17	14
Members	4,925	5,044	4,944	4,616	4,269
	\$'000	\$'000	\$'000	\$'000	\$'000
Sales	5,231	7,363	7,712	7,077	6,538
Less Purchases	4,068	5,618	6,006	6,001	5,516
Gross Surplus	1,163	1,745	1,706	1,076	1,022
Less Operating Expenses	728	1,144	1,134	506	433
Operating Surplus	435	601	572	570	589
Add Non-Operating Receipts	445	558	662	836	906
Less Non-Operating Expenses—					
Interest	99	103	110	88	92
Salaries, Administration, &c.	(a)	340	366	340	334
Other	707	631	723	893	888
Net Surplus	74	85	35	85	181
Dividends Paid	58	9	11	85	47

(a) Not available as separate item.

The next table gives a statement of the assets and liabilities of the co-operative societies:

Co-operative Societies—Assets and Liabilities
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Assets (End of Period)—					
Fixed	1,467	1,513	1,568	1,389	1,410
Current	2,701	2,781	3,032	2,916	2,969
Total Assets	4,168	4,294	4,600	4,305	4,379
Liabilities (End of Period)—					
Paid-up Capital	1,239	1,252	1,262	1,129	1,107
Accumulated Profits	99	194	212	261	314
Reserve Funds	105	115	124	163	167
Other Liabilities	2,725	2,733	3,002	2,752	2,791
Total Liabilities	4,168	4,294	4,600	4,305	4,379

Co-operative Credit Societies

Description

The co-operative credit societies are commonly referred to as "credit unions" and are registered under the *Co-operative Industrial Societies Act* 1928 as amended. In Tasmania, credit unions have been established by trade unions (e.g. those serving teachers, State and Commonwealth public servants, hospital employees, &c.) and by members of church groups. Members contribute capital by taking out shares and making deposits; loans are made to members, repayment being by regular instalments. Rules of individual societies vary but, in one example, members pay \$1 for share capital and provide all other capital by making interest-bearing deposits.

Transactions

The following table shows the societies' annual transactions and also their assets and liabilities:

Co-operative Credit Societies

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
	No.	No.	No.	No.	No.
Societies	7	7	8	12	13
Shareholders	902	1,403	1,740	2,715	3,631
Shares	7,343	9,565	12,248	16,559	21,889
	\$'000	\$'000	\$'000	\$'000	\$'000
Advances Made	94	201	306	598	1,026
Advances Repaid	43	94	184	320	630
Deposits Lodged	66	163	252	452	538
Deposits Withdrawn	17	60	114	180	180
Assets (At End of Period)—					
Loans to Members	81	188	310	587	983
Other	7	11	43	57	45
Total Assets	88	199	353	644	1,028
Liabilities (At End of Period)—					
Paid-up Capital and Subscriptions	15	15	19	25	30
Deposits	70	172	311	582	941
Other	3	12	23	37	57
Total Liabilities	88	199	353	644	1,028

Pension and Superannuation Schemes*Private Schemes*

Surveys on an Australia-wide basis have revealed the existence, in respect of private businesses, of the following types of scheme for providing pensions and/or retiring allowances to employees:

- (i) schemes operated through life insurance offices, friendly societies and other organisations such as unit trusts;
- (ii) superannuation, pension and retiring allowance funds constituted by businesses;
- (iii) direct payments of pensions and/or retiring allowances by the employer.

In classifying businesses in the surveys, the following monthly pay-roll ranges are self-explanatory: "small", \$1,720 and under \$6,000; "medium", \$6,000 and under \$40,000; "large", over \$40,000.

In an Australia-wide survey made by the Bureau in 1962-63, it was found that 52 per cent of all Australian businesses operated pension or retiring allowance schemes of one or more of the types described in the previous paragraph; 43 per cent of small businesses operated such schemes, 72 per cent of medium businesses and 96 per cent of large businesses. As to types of scheme, 57 per cent of all schemes were based on life insurance offices (with or without direct payments by the employer), 20 per cent worked through separately constituted funds, 22 per cent involved a combination of the two previous types, while one per cent depended on direct employer payments only.

The survey was designed to give information for Australia as a whole but not for individual States; accordingly, separate data are not available for Tasmania. Although no figures can be quoted for the State, the broad conclusions set out in the previous paragraph illustrate the point that superannuation, pension and retiring allowance schemes operate fairly extensively in the private sector of the economy, and are not confined exclusively to the government sector.

Government, Local Government and Semi-Government Schemes

The levels of government operating in Tasmania are: (i) Commonwealth; (ii) State; (iii) Local; (iv) Semi-government authority. In the section that follows, any pension or superannuation scheme affecting employees of the Commonwealth Government or its instrumentalities is excluded; the principal fund so excluded is the Commonwealth Superannuation Fund for which State details are not available.

The inclusion of government superannuation and pension schemes as part of "Private Finance" derives its logic from the fact that the funds involved do not belong to any government but are actually trust moneys held on behalf of contributors. Employees of the State Government contribute to separately constituted funds to which the State Government also makes contributions. Employees of local government and semi-government authorities are covered either by separately constituted funds or through schemes operated through life insurance offices.

Separately Constituted Funds: In the table that follows, the operations of the following schemes have been combined and summarised: (i) State Superannuation Fund; (ii) State Teachers' Superannuation Fund; (iii) Police Provident Fund; (iv) Metropolitan Transport Trust—Retiring Allowance and Staff Pension Funds; (v) Marine Boards' independent schemes; (vi) University of Tasmania—Staff Superannuation, Invalidity Pension and Supplementary Pension Schemes.

Government, Local Government and Semi-Government Pension and Superannuation Schemes Operated Through Separately Constituted Funds

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	1,220	1,252	1,306	1,462	1,452
Employing Authorities	923	1,134	1,159	1,278	1,477
Interest, Dividends and Rent	542	646	769	866	962
Other Income	9	11	184	32	51
Total	2,694	3,043	3,418	3,638	3,942
Expenditure—					
Pensions	1,053	1,210	1,300	1,423	1,655
Lump Sum Payments—					
On Retirement ..	53	71	103	96	90
On Resignation ..	178	167	229	300	299
Other Expenditure ..	18	40	11	13	13
Total	1,302	1,488	1,643	1,832	2,057
Total Assets (At End of Period)	11,761	13,320	15,327	16,789	18,744
Contributors (At End of Period)	No. 9,508	No. 9,964	No. 10,322	No. 10,701	No. 10,914

State Superannuation Fund: In the previous table, the principal fund included is the State Superannuation Fund to which contribute all permanent full-time employees of the Public Service, Teaching Service, Transport Commission, Hydro-Electric Commission and all hospitals subsidised by the State Government. (The Teachers' Superannuation Fund is now almost wound up and teachers contribute to the State Superannuation Fund.) At 30th June, 1964 there were 9,516 contributors to the State Superannuation Fund, the number of pensioners being 2,143. At 30th June, 1965, the corresponding figures were 10,136 contributors and 2,257 pensioners. Assets of the State Superannuation Fund approached \$16,000,000 at 30th June, 1965.

Police Provident Fund: The Police Provident Fund, also included in the previous table, had assets approaching \$2,000,000 at 30th June, 1965. However, by an amendment of the *Superannuation Act* 1938 made in 1963, it was provided that police officers appointed after 31st December, 1963, were required to become contributors to the State Superannuation Fund. Police officers appointed prior to 1st January, 1964, could continue as contributors to the Police Provident Fund or exercise an option, prior to 1st April, 1964, to become contributors to the State Superannuation Fund.

Schemes Operated Through Life Insurance Offices: A number of local government and semi-government authorities in Tasmania operate pension and superannuation schemes for their employees, not through separately constituted funds, but through life insurance offices. The next table combines and summarises the operations of such schemes, the following being the list of authorities concerned: (i) Semi-government—marine boards, fire brigades, Metropolitan Transport Trust (Launceston and Burnie), University of Tasmania, ambulances, Society for Blind and Deaf, Museum and Art Gallery, Botanical Gardens; (ii) Local Government—the cities and municipalities. It will be observed that some authorities e.g. University, Metropolitan Transport Trust, &c. operate schemes on both bases, i.e. some through separately constituted funds, and others through life insurance offices.

Local and Semi-Government Pension and Superannuation Schemes Operated Through Life Insurance Offices

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	117	176	183	216	238
Employing Authorities	124	254	243	303	339
Surrenders	38	50	50	57	70
Death Claims	25	15	28	27	41
Matured Policies	14	24	49	61	48
Other Income	13	19	22	31	32
Total	331	538	575	695	768
Expenditure—					
Premiums paid to Insurance Companies	203	362	367	448	514
Benefits—					
On Death or Retirement	53	14	61	114	116
On Resignation or Dismissal	40	63	48	54	75
Other Expenditure	10	45	7	7	13
Total	306	484	483	623	718
Contributors (At End of Period)	No. 1,131	No. 1,402	No. 1,495	No. 1,766	No. 1,825

Miners' Pension Fund

The Fund was established to provide for pensions to miners upon retirement or when incapacitated by injury, &c. and, in certain circumstances, to widows and dependants. Contributions to the fund are made by the State Government, mine owners and miners. Details of the operations of the Fund are as follows:

Miners' Pension Fund

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Income—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Employees	11	9	8	5	4
State Government ..	29	27	24	30	30
Mine Owners	29	27	24	19	14
Interest, Dividends and Rent	14	15	16	16	15
Other Income .. ..	..	..	1	..	1
Total	83	78	73	70	64
Expenditure—					
Pensions	60	64	74	72	73
Lump Sum Payments ..	..	..	..	19	..
Other Expenditure ..	2	2	7	2	11
Total	62	66	81	93	84
Assets (At End of Period) ..	305	317	309	292	270
Contributors (At End of Period)	No. 272	No. 222	No. 160	No. 110	No. 55

Until 1962-63, the State Government contributed an amount to match that of the mine owners, the employers' share being related to coal production. After actuarial investigation, it was decided to strengthen the Fund and an amount of £15,000 (\$30,000) was stipulated in amending legislation as the Government's maximum annual contribution. The maximum was paid in 1963-64 and 1964-65.

The Parliamentary Pension and Superannuation Scheme

The Tasmanian Parliament, in common with the parliaments of the other States and the Commonwealth, operates a superannuation scheme for the benefit of members who retire or are defeated after having served a minimum qualifying period. Basic rate pensions for Tasmanian members are payable after 15 years' service, lesser rate pensions being calculated pro-rata to length of service expressed as a fraction of 15 years; if the fraction is less than $\frac{8}{15}$ (i.e. service less than eight years) then the member merely receives a refund of his contributions. The basic rate of full pension is the Hobart basic wage (as varied from time to time), but a member, by increasing his subscription from £156 (\$312) per annum to £312 (\$624), may contract to receive double the basic rate; provision also exists for subscription scales yielding $1\frac{1}{3}$ and $1\frac{2}{3}$ of the Hobart basic wage. (These provisions, written into the *Parliamentary Retiring Allowances Act* 1955 as amended, were current in February, 1966.)

Transactions of the fund (Parliamentary Retiring Allowances Trust) are shown in the following table:

State Parliamentary Pension and Superannuation Scheme
(**\$'000**)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Income—					
Members' Contribution (a)	17	25	33	33	34
Government Contribution	3	3	3	4	3
Interest	2	2	2	3	4
Total	22	30	38	40	41
Expenditure—Pension Payments					
(b)	17	21	25	35	44
Total Assets (At End of Period)	43	52	64	72	69

(a) Number of contributors throughout period, 54 (House of Assembly, 35; Legislative Council, 19). Contribution for basic rate pension compulsory.

(b) Number of pensioners at 30th June, 1965: ex-members, 15; widows of ex-members, 5.

Chapter 12

TRADE, TRANSPORT AND COMMUNICATIONS

OVERSEA AND INTERSTATE TRADE

Historical

As an important source of government revenue, sea trade of Tasmania was recorded from almost the date of the first settlement. In the "Statistical Tables, Van Diemen's Land, 1804 to 1823" appears the following entry for 1822 (as recorded in £ sterling):

"Imports valued at £22,214.5.2. No duties on British goods. There were duties levied on goods from India, Batavia and Mauritius.

Exports valued at £57,928.18.0.

Nature of Exports—61,072 bushels wheat, 724 tons oil, 3 tons whalefins, 4,370 seal skins, 3,106 kangaroo skins, 150 hides, 7 logs of pine, 2 logs of beefwood, 1,000 bushels of salt, 157,467 pounds wool, 1,500 horses.

Customs' Duties collected £22,001.16.0".

The "Statistics of Van Diemen's Land for 1838-1841" included the following data:

"Value of Imports into, and Exports from, Van Diemen's Land
During the Years 1838 and 1839"
(£) (a)

Country	Imports		Exports	
	1838	1839	1838	1839
Great Britain	556,746	573,491	321,871	326,369
British Colonies	129,602	150,061	251,604	545,196
United States	2,661	6,013	8,000	3,600
Foreign States	13,947	17,322	..	..
Total	702,956	746,887	581,475	875,165

(a) Unit is sterling currency.

There is, in fact, a continuous series of total trade statistics dating from 1824 to 1909. Until the foundation of the Commonwealth in 1901, trade with other parts of Australia was recorded as originating from or being destined for "British Colonies"; in other words, all Tasmanian sea trade was regarded as oversea. (An annual statistical series dissecting total trade in terms of "over-sea" and "interstate" was later compiled back to 1860 but obviously the latter term had little significance before Section 92 of the Constitution made interstate "trade, commerce, and intercourse absolutely free".)

From Federation to 1909, statistics were collected and compiled by the newly formed Commonwealth Customs Department for *all* sea trade, but since 1910 only direct *oversea* trade has been recorded by the Customs. In an island

State, it became apparent that statistics of overseas trade alone were inadequate to record economic activity and, from 1922-23, the Government Statistician collected and published details of interstate trade; the collection of these data, now undertaken by the State Office of the Bureau of Census and Statistics, is carried out independently of the Customs Department and depends primarily on documents made available by Tasmanian Marine Boards and Harbour Trusts. To summarise, there is a *total* trade series from 1824 to 1909, an *oversea* trade series from 1910 to 1921-22 and a *total* trade series from 1922-23 to the present day.

In the immediate post-war period, there was a marked expansion of commercial aviation; the freight being carried was a component of interstate trade and steps were taken to record it, the first published figures appearing for 1949-50. Thus, the total trade of Tasmania is now recorded in three sections: (1) By Sea, Oversea; (2) By Sea, Interstate; (3) By Air, Interstate.

Value of Trade from 1824

Due to considerable and persistent changes in the purchasing power of money, it is extremely difficult to satisfactorily interpret any long-term statistical series expressed in money terms. The following table is therefore of interest historically but subject to all the disabilities associated with long-term money series (including devaluations of Australian currency in 1930 and 1949):

Total Value of Trade by Sea and Air—Historical Summary
(\$'000)

Year	Value of Imports				Value of Exports			
	By Sea		By Air	Total	By Sea		By Air	Total
	Oversea	Interstate	Interstate		Oversea	Interstate	Interstate	
1824 ..	(a)	(a)	..	124	(a)	(a)	..	30
1860 ..	1,686	450	..	2,136	1,544	380	..	1,924
1880 ..	738	2,000	..	2,738	1,568	1,456	..	3,024
1900 ..	1,402	2,746	..	4,148	3,078	2,144	..	5,222
1910 ..	1,662	(b)	..	(a)	1,040	(b)	..	(a)
1919-20	1,626	(b)	..	(a)	4,022	(b)	..	(a)
1929-30	3,668	16,028	..	19,696	4,978	13,198	..	18,176
1939-40	3,188	21,780	..	24,968	4,852	20,954	..	25,806
1949-50	18,704	51,218	(c) 10,670	80,592	29,936	42,672	(c) 3,996	76,604
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1964-65	35,717	169,523	20,819	226,059	87,315	193,371	25,770	306,456

(a) Not available.

(b) Collection discontinued for period 1910 to 1921-22.

(c) First collected in 1949-50.

Note on Currency

The pre-Federation details were recorded in sterling; subsequent details have been recorded in £A which had parity with sterling until 1930 when devaluation made £A 1.25 equal to the £ sterling. In the tables in this section, recorded figures have been converted to \$A by simply doubling the originals, irrespective of their year of occurrence:

Definition of Oversea and Interstate

Tasmanian goods destined for other countries may pass from Tasmanian ports direct or by transshipment through other Australian ports. Similarly, overseas goods may reach Tasmania direct or by transshipment through other

Australian ports. The following sets out the classifications used in describing direct shipments and transshipments:

Classification of Imports and Exports

Particulars	Route of Goods to and from Other Countries	Classification of Transaction	Classification by Place of Origin or Destination
Tasmanian Exports ..	(1) Shipped Direct from Tasmanian ports	Oversea	Country of Destination
	(2) Discharged in other Australian ports before shipment oversea	Interstate	Australian State where discharged
Tasmanian Imports ..	(1) Shipped Direct to Tasmanian Ports	Oversea	Country of Origin
	(2) Discharged in other Australian ports before shipment to Tasmania	Interstate	Australian State from which shipment made

By way of example, a new Japanese car transhipped in Melbourne and discharged in Tasmania is classified as an item of interstate trade and Victoria, not Japan, is classified as the place of origin. (Victorian oversea imports will include the entry of the vehicle from Japan.)

Effect of Motor Vehicles on Total Value of Imports and Exports

Import and export details of motor cars and commercial vehicles include tourists' vehicles entering and leaving the State. The inauguration of the vehicular ferry service by the "Princess of Tasmania" in October, 1959, resulted in a sharp increase in the transport of vehicles as suggested in the following table:

Motor Cars and Commercial Vehicles (a)—Value of Imports and Exports (\$'000)

Particulars	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
Imports	19,258	29,148	31,542	31,634	36,202	39,496
Exports	3,654	13,100	14,496	15,404	16,288	17,050

(a) As well as new and used vehicles, includes business and tourists' vehicles moving to and from the State.

Since Tasmanians do not carry out motor vehicle assembly on any extensive scale (and certainly not for export), it follows that total import and export values for 1963-64 are both inflated by approximately \$17,000,000 worth of vehicles, principally tourist, which entered and left the State. If vehicle exports are offset against imports, the net import figure will still include some used as well as new vehicles.

Source of Trade Statistics

Oversea trade statistics are compiled from documents obtained under the *Customs Act* 1901-1960 and are supplied to the Commonwealth Bureau of Census and Statistics by the Department of Customs and Excise. *Interstate sea* trade statistics are compiled from trade warrants required under the authority of the *Marine Act* 1921 and made available to the Tasmanian branch of the Bureau by the various Marine Boards and Harbour Trusts. Statistics of *inter-*

state air trade are compiled from returns furnished direct to the Tasmanian Office of the Bureau by all those who use this medium for the transportation of goods.

Values

All values subsequently quoted will be in terms of \$A. Attention is called to changes in the purchasing power of money in the periods covered by tables that follow.

The cost of importing goods into any country will theoretically contain four elements:

- (1) The "original" price at door of factory, warehouse, &c.
- (2) The cost of delivering goods to the ship "free on board".
- (3) Sea freight and associated charges between ports.
- (4) Delivery cost from port to buyer.

Trade statistics base values on the first two elements but exclude the third and fourth, as set out in the following definitions:

The basis of value for overseas imports is "transaction value, actual (f.o.b.)" or "domestic value (f.o.b.)" if higher. Oversea exports are valued *f.o.b.* at the Australian port of shipment as follows: (i) for goods sold before export—the price at which the goods were sold, or (ii) for goods shipped on consignment—the current price offering for similar goods of Australian origin in the principal markets of the country to which the goods were despatched. Interstate imports and exports are valued *f.o.b.* at the port of shipment.

Tasmanian Ports

Although there are nine port authorities (known as Marine Boards or Harbour Trusts) in Tasmania, overseas trade is restricted to the ports of Hobart, Launceston, Burnie and Devonport. The names of ports in subsequent tables refer to the towns in which the controlling marine boards are located. Thus "Hobart" includes Port Huon; "Launceston" includes Bell Bay and Beauty Point, &c. On 1st January, 1963, the port of Ulverstone came under the control of the Marine Board of Devonport.

Total Trade of Tasmania

The following table shows Tasmanian total trade and its components in recent years:

Year	Total Trade (\$'000)							
	Imports				Exports			
	By Sea		By Air	Total Imports	By Sea		By Air	Total Exports
	Oversea	Interstate	Interstate		Oversea	Interstate	Interstate	
1954-55	30,258	89,958	19,148	139,364	37,524	85,376	14,494	137,394
1955-56	24,884	99,608	21,166	145,658	40,608	100,630	18,762	160,000
1956-57	27,764	105,788	20,020	153,572	45,004	108,654	18,112	171,770
1957-58	25,466	113,636	19,122	158,224	44,506	109,652	18,354	172,512
1958-59	26,374	121,138	19,718	167,230	43,932	114,424	17,584	175,940
1959-60	27,606	130,014	19,210	176,830	47,730	137,530	20,818	206,078
1960-61	37,208	141,086	19,356	197,650	42,588	143,036	21,944	207,568
1961-62	26,788	141,776	18,000	186,564	57,196	140,794	23,298	221,288
1962-63	35,746	150,620	18,158	204,524	66,792	146,454	21,602	234,848
1963-64	35,032	167,964	19,840	222,836	78,318	173,590	23,424	275,332
1964-65	35,717	169,523	20,819	226,059	87,315	193,371	25,770	306,456

It will be observed that interstate trade is the major element both in imports and exports. The next table shows the balance of trade (excess of exports over imports):

Balance of Trade (Sea and Air)

Year	Balance of Trade (Excess of Exports)		Year	Balance of Trade (Excess of Exports)	
	Total (\$'000)	Per Head of Mean Population (\$)		Total (\$'000)	Per Head of Mean Population (\$)
1954-55	- 1,970	- 6.30	1960-61 ..	9,918	28.33
1955-56	14,342	45.06	1961-62 ..	34,724	97.40
1956-57	18,198	56.05	1962-63 ..	30,324	83.74
1957-58	14,288	43.03	1963-64 ..	52,496	143.36
1958-59	8,710	25.72	1964-65 ..	80,397	218.42
1959-60	29,248	85.00			

Note: Minus sign (—) means excess of imports.

Balance of Payments

Estimates of Australia's balance of payments are prepared for the purpose of providing a systematic record in money terms of the economic transactions which take place over a period between Australia and all other countries. No official estimates are prepared for a Tasmanian balance of payments—i.e. for all economic transactions between Tasmania and "the rest of the world, including the other Australian States". If such estimates were compiled, then the favourable balance of trade shown above would be merely a single item in a complex calculation involving the net outflow of dividends and interest, freight and insurance charges, inter-governmental financial transactions, net inflow of funds from tourism, &c.

Oversea Trade by Sea

From the earliest days, the United Kingdom was Tasmania's main overseas market and source of overseas imports; even today, the United Kingdom is the principal country in the State's overseas trade. In the last decade, however, trade with foreign countries has begun to assume greater importance, as shown in the following table:

Total Value of Trade by Sea With Commonwealth and Foreign Countries (\$'000)

Year	Value of Imports From—				Value of Exports To—			
	Commonwealth Countries			Foreign Countries	Commonwealth Countries			Foreign Countries
	United Kingdom	New Zealand	Other		United Kingdom	New Zealand	Other	
1954-55 ..	13,050	2,024	5,420	9,764	16,600	466	5,432	15,026
1955-56 ..	10,978	1,630	2,442	9,834	18,110	914	5,844	15,740
1956-57 ..	11,368	2,120	3,720	10,556	17,780	700	7,132	19,392
1957-58 ..	10,780	2,074	3,906	8,706	18,688	562	5,722	19,534
1958-59 ..	8,686	2,328	4,606	10,754	20,090	854	6,346	16,642
1959-60 ..	8,272	1,750	5,048	12,536	19,880	736	6,138	20,976
1960-61 ..	12,960	2,346	6,246	15,656	14,422	976	8,446	18,744
1961-62 ..	8,998	2,354	4,700	10,736	20,536	558	6,694	29,408
1962-63 ..	8,840	3,190	5,660	18,056	22,590	756	7,524	35,922
1963-64 ..	7,738	2,846	5,346	19,102	25,816	1,158	9,298	42,046
1964-65 ..	7,777	3,071	4,169	20,700	30,872	2,034	15,387	39,022

Trade with Selected Countries

The principal countries of origin for overseas imports shipped direct to Tasmania in 1963-64 are shown, followed by the value in \$ million: U.K., 7.7; U.S.A., 5.9; N.Z., 2.8; Japan, 2.8; Sweden, 2.0; West Germany, 1.7; Canada, 1.4. The principal countries of destination for overseas exports shipped direct from Tasmania (value in \$ million) were: U.K., 25.8; U.S.A., 8.5; West Germany, 6.5; Japan, 4.8; France, 4.3; Italy, 4.3; India, 3.3; Thailand, 2.7; Hong Kong, 1.8; Netherlands, 1.6.

The next table shows the trade of Tasmania with selected overseas countries for the three years to 1963-64; countries selected are those for which imports or exports approached or exceeded \$500,000 in any one of the three years under review.

Trade With Oversea Countries
(\$'000)

Country of Origin or Destination	Imports			Exports		
	1961-62	1962-63	1963-64	1961-62	1962-63	1963-64
Commonwealth Countries—						
United Kingdom	8,998	8,840	7,738	20,536	22,590	25,816
Canada ..	1,400	2,046	1,363	146	246	230
Hong Kong ..	94	296	194	1,164	1,236	1,818
India ..	440	484	194	2,738	2,984	3,359
Malaya ..	164	2	..	760	928	1,452
New Zealand ..	2,354	3,190	2,846	558	756	1,158
Singapore ..	32	2	181	1,178	1,214	1,599
Other ..	2,570	2,830	3,414	708	916	840
Total ..	16,052	17,690	15,930	27,788	30,870	36,272
Foreign Countries—						
Arabian States ..	342	154	260	26	24	40
Belgium-Luxembourg ..	168	114	379	736	1,970	2,809
China, Mainland ..	106	288	461	422	538	204
Finland ..	558	660	493	70	102	95
France ..	146	396	421	3,052	3,294	4,278
West Germany ..	810	2,074	1,717	4,002	4,718	6,521
Indonesia ..	372	398	108	20	34	40
Iran ..	436	208	624	58	..	..
Italy ..	546	1,522	504	2,876	3,488	4,250
Japan ..	784	1,604	2,770	4,372	3,968	4,786
Netherlands ..	442	616	904	1,512	2,258	1,568
Norway ..	528	234	196	94	110	82
Philippines ..	..	..	..	886	1,220	1,285
South Africa ..	246	898	984	62	114	125
Sweden ..	1,440	1,740	2,048	818	1,040	1,071
Switzerland ..	222	454	313	26	18	10
Thailand ..	..	..	..	1,638	2,332	2,712
Turkey ..	284	178	183	174	536	226
U.S.A. ..	2,548	5,708	5,933	5,600	6,910	8,499
U.S.S.R. ..	..	..	..	348	728	436
Other ..	758	810	804	2,190	1,764	2,518
Total ..	10,736	18,056	19,102	28,982	35,166	41,555
"For Orders" (a) ..	..	..	..	426	756	491
Grand Total ..	26,788	35,746	35,032	57,196	66,792	78,318

(a) Country of consignment not determined at time of shipment.

Tasmanian and Australian Oversea Trade

Before comparing the values of the overseas trade of Tasmania and Australia, it is necessary to take into account the value of outside packages, containers, crates, &c. in which goods are ordinarily imported from overseas. Such values have been omitted from all import tables in this chapter (except in the following comparative table), but they are normally included in trade statistics published by the Commonwealth Statistician. Export values in this chapter include the value of outside packages.

The following table compares the value of the overseas trade of Tasmania and Australia:

Value of Oversea Trade—Tasmania and Australia

Particulars		1959-60	1960-61	1961-62	1962-63	1963-64
IMPORTS						
Australia—	Total (\$'000)	1,854,182	2,175,154	1,769,492	2,162,670	2,372,658
	Per Head (\$)	182.42	209.34	166.84	200.04	215.18
Tasmania (a)—	Total (\$'000)	28,062	37,746	27,248	36,364	35,513
	Per Head (\$)	81.54	107.82	76.40	100.42	96.98
EXPORTS						
Australia—	Total (\$'000)	1,875,364	1,937,686	2,154,568	2,151,812	2,782,460
	Per Head (\$)	184.52	186.48	203.14	199.04	252.34
Tasmania—	Total (\$'000)	47,730	42,588	57,196	66,792	78,318
	Per Head (\$)	138.70	121.66	160.36	184.44	213.87

(a) Value of outside packages included: 1959-60, \$455,960; 1960-61, \$538,616; 1961-62, \$459,700; 1962-63, \$618,420; 1963-64, \$481,324.

The relatively low value of overseas trade, particularly imports, per head of Tasmanian population is due in part to the transshipment of goods in other Australian ports. In the case of imports, an additional factor appears to be the dependence of most of the State's major industries on raw materials produced within Australia.

Interstate Trade by Air

No data are compiled to show State of origin or State of destination for trade by air; most planes carrying commercial freights in connection with Tasmanian trade take off from or land in Victoria.

The value of interstate trade by air, since 1961-62, has been as follows:
Imports: 1961-62, \$18,000,000; 1962-63, \$18,158,000; 1963-64, \$19,840,000.
Exports: 1961-62, \$23,298,000; 1962-63, \$21,602,000; 1963-64, \$23,424,000.

Interstate Trade by Sea

As might be expected with Melbourne the major port closest to Tasmania, the bulk of the island's interstate trade is transacted with Victoria. In 1963-64, Victoria was the source of 67 per cent of Tasmania's interstate sea imports and the destination of 45 per cent of its interstate sea exports. The next table shows the value of interstate sea trade with the Australian States in the period 1961-62

to 1963-64. Imports include the value of goods imported into other States from overseas and transhipped to Tasmania; exports include the value of goods exported to other States for transhipment overseas.

**Value of Interstate Sea Trade
(\$'000)**

Australian State of Origin or Destination	Imports			Exports		
	1961-62	1962-63	1963-64	1961-62	1962-63	1963-64
N.S.W.	32,828	33,176	35,226	55,812	56,842	73,415
Victoria	96,012	104,254	111,781	63,500	66,516	77,237
Queensland	1,490	1,508	1,985	9,046	10,270	9,386
S.A.	10,356	10,268	16,609	8,522	8,852	9,391
W.A.	1,090	1,414	2,363	3,914	3,974	4,161
Total	141,776	150,620	167,964	140,794	146,454	173,590

Sea Trade of Tasmanian Ports

In the following table, the value of total imports and exports by sea is shown for each port:

**Total Value of Sea Trade Classified According to Port
(\$'000)**

Port	Imports		Exports		Total Sea Trade	
	1962-63	1963-64	1962-63	1963-64	1962-63	1963-64
Burnie	23,182	28,478	39,975	46,736	63,157	75,214
Devonport	42,471	49,627	34,856	38,686	77,327	88,313
Hobart	64,085	61,530	92,716	105,085	156,801	166,615
King Island (Currie)	1,064	1,084	1,817	2,678	2,881	3,762
Launceston	53,428	60,486	35,584	47,647	89,012	108,133
Smithton	64	40	6	5	70	45
Stanley	139	173	1,531	1,326	1,670	1,499
Strahan	1,794	1,578	6,743	9,745	8,537	11,323
Ulverstone	(a) 139	..	(a) 18	..	(a) 157	..
Total	186,366	202,996	213,246	251,908	399,612	454,904

(a) July to December, 1962, only; port taken over by Devonport Marine Board from 1st January, 1963.

The next table compares the proportion of total sea trade values attributed to each port:

**Total Value of Sea Trade—Port Proportions
(Per Cent)**

Port	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
Burnie	15.3	14.4	15.4	15.2	15.8	16.6
Devonport	5.6	16.2	20.0	19.6	19.4	19.4
Hobart	50.8	46.5	45.1	41.4	39.2	36.6
King Island (Currie)	0.5	0.7	0.9	0.9	0.8	0.8
Launceston	23.5	19.1	15.6	20.2	22.3	23.8
Smithton	0.1	0.1	0.0	0.0	0.0	0.0
Stanley	0.6	0.5	0.8	0.3	0.4	0.3
Strahan	2.4	2.1	1.8	2.4	2.1	2.5
Ulverstone	1.2	0.4	0.4	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

The marked increase in the proportion of total sea trade attributed to Devonport was due to the introduction of a roll-on roll-off ferry service to Melbourne in October, 1959; the drop in the proportion of sea trade attributed to Hobart is related to the increasing use of "sea-road" facilities available through the ports of Devonport, Launceston and Burnie. The vessels involved in the "sea-road" service to northern and north-western ports are the "Princess of Tasmania" and the "Bass Trader". As from June, 1964, similar facilities became available at Hobart when the "Seaway Queen" began a "sea-road" service to Melbourne, followed by the "Seaway King" operating a Sydney service from September, 1964; roll-on roll-off ferry services, both to Hobart and northern ports, were augmented by the "Empress of Australia" in January, 1965.

Air Trade of Tasmanian Airports

Although Tasmania has a number of airports, only six are used on a regular basis for interstate trade; four are located near Hobart, Launceston, Burnie and Devonport respectively and the remaining two on King and Flinders Islands respectively.

The following table shows the value of interstate air trade passing through Tasmanian air-ports:

Total Value of Interstate Air Trade Classified According to Airport
('\$000)

Airport	Imports		Exports		Total Air Trade	
	1962-63	1963-64	1962-63	1963-64	1962-63	1963-64
Hobart	9,023	10,218	2,789	3,080	11,812	13,298
Launceston.. ..	5,785	5,974	17,638	19,102	23,423	25,076
Devonport	1,238	1,386	186	221	1,424	1,607
Wynyard (a) ..	1,388	1,473	215	201	1,603	1,674
King Island ..	542	583	684	709	1,226	1,292
Flinders Island ..	182	206	90	111	272	317
Total ..	18,158	19,840	21,602	23,424	39,760	43,264

(a) Including Smithton.

The percentage of the total value of air trade passing through each Tasmanian airport in 1963-64 was: Hobart, 30.7; Launceston, 58.0; Devonport, 3.7; Wynyard, 3.9; King Island, 3.0; Flinders Island, 0.7.

Commodities Carried by Air

It will be observed that the value of trade by air approaches 10 per cent of the value of total trade by sea and air combined. With regard to exports by air (valued at \$23,424,000 in 1963-64), the major group was "Woollen Manufactures and Other Textiles" valued at \$21,470,000; exports of all food-stuffs (meat, crayfish, fruit, &c.) accounted for a further \$1,067,400. For imports, there is a much greater range of commodities involved, the chief group being "Apparel and Attire" valued at \$11,648,000; the other major group of commodities was "Metals, Metal Manufactures and Machinery" valued at \$3,403,400.

Imports of Principal Commodities

The next table shows the value of the principal commodities imported into Tasmania by sea and air during each of the years 1961-62 to 1963-64:

Imports of Principal Commodities by Sea and Air—Values
('\$000)

Commodity	1961-62	1962-63	1963-64
Beer, Wine and Spirits	2,640	2,750	2,739
Grains Unprepared—Wheat	2,764	2,796	2,418
Sugar	4,106	4,260	4,453
Tobacco, Cigars and Cigarettes	10,376	10,898	11,980
Other Food and Drink	15,700	15,584	18,943
Chemicals, Drugs, Fertilisers	6,230	8,730	10,455
Drapery, Clothing and Textiles	20,382	21,764	24,446
Metals, Metal Manufactures and Machinery—			
Galvanised Iron, Corrugated and Plain	2,458	2,578	2,679
Machines and Machinery	13,878	13,806	12,603
Motor Cars and Commercial Vehicles (a)	31,634	36,202	39,496
Motor Vehicle Chassis and Parts	2,050	1,986	2,253
Tinned Metal Sheets and Wire	2,194	2,172	2,292
Pipes and Tubes	1,662	2,236	1,491
Other	21,456	22,226	24,714
Ores and Concentrates	6,858	7,272	8,381
Motor Spirit (including Aviation Spirit)	5,484	5,568	6,234
Kerosene (including Aviation Turbine Fuel)	296	348	415
Other Petroleum Oils	4,186	4,918	7,688
Paper and Stationery (including Wood Pulp)	9,340	13,090	12,066
Rubber Goods	3,178	3,256	3,526
Wool, Greasy	3,222	4,232	4,299
Not Elsewhere Included	16,470	17,852	19,265
Total Imports	186,564	204,524	222,836

(a) As well as new and used vehicles, item includes business and tourists' vehicles entering State.

The table that follows shows the quantities of the principal commodities imported and has been compiled, as far as this is practicable, to match the preceding table of values.

Imports of Principal Commodities by Sea and Air—Quantities

Commodity	Unit of Quantity	1961-62	1962-63	1963-64
Alcoholic Beverages—				
Ale, Beer, Stout and Cider	gall.	327,986	347,545	315,713
Wines	gall.	395,355	370,452	382,298
Spirits—Oversea	proof gall.	22,134	13,328	18,188
Interstate	gall.	131,004	141,303	138,892
Grains Unprepared—Wheat	ton	47,379	47,041	41,304
Sugar	ton	23,542	24,384	25,381
Tobacco, Cigars and Cigarettes	'000 lb.	2,029	2,066	2,292
Fertilizers	ton	100,091	85,759	82,401
Metals and Metal Manufactures—				
Galvanised Iron, Corrugated and Plain	cwt.	374,598	361,290	365,979
Motor Cars and Commercial Vehicles (a)	no.	17,732	21,139	23,334
Pipes and Tubes	cwt.	222,504	260,031	200,895
Tinned Metal Sheets	cwt.	96,737	115,997	114,247
Wire	cwt.	193,722	181,383	200,511
Ores and Concentrates	ton	312,990	359,564	371,167
Motor Spirit (including Aviation Spirit)	'000 gall.	47,214	47,812	55,892
Kerosene (including Aviation Turbine Fuel)	'000 gall.	2,228	2,433	3,681
Wool, Greasy	'000 lb.	4,910	6,472	6,132

(a) As well as new and used vehicles, item includes business and tourists' vehicles entering State.

Exports of Principal Commodities

The following table shows the value of the principal commodities exported from Tasmania by sea and air during each of the years 1961-62 to 1963-64. The largest item listed—"Commodities Not Available for Publication"—comprises the total export value of aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard and plywood.

Exports of Principal Commodities by Sea and Air—Values
(\$'000)

Commodity	1961-62	1962-63	1963-64
Butter	3,942	4,368	4,371
Fish (including Crayfish)	1,792	1,812	1,488
Fruit—Apples (Fresh)	14,422	16,558	18,040
Pears (Fresh)	1,150	950	1,414
Processed	3,832	3,080	2,079
Hops	1,914	1,606	1,357
Meat—Beef	1,646	2,652	3,364
Lamb and Mutton	958	1,100	1,225
Other	674	1,002	1,089
Potatoes (Fresh)	2,212	1,192	1,539
Preserved Vegetables (including Dried)	5,026	6,678	8,190
Other Food and Drink (including Confectionery)	18,146	20,782	21,770
Fertilizers	2,666	3,662	2,138
Hides and Skins	2,312	2,526	3,461
Metal Manufactures (including Machinery)	7,564	8,044	8,572
Metals, Refined—Cadmium	684	848	1,669
Copper	6,706	6,200	9,451
Zinc	23,680	23,778	27,909
Ores and Concentrates—Silver-Lead	2,810	3,192	4,302
Tin	1,740	1,902	2,585
Other	1,734	1,244	2,215
Motor Cars and Commercial Vehicles (a)	15,404	16,288	17,050
Pigments, Paints and Varnishes	6,500	5,992	7,675
Timber—Dressed	2,524	3,092	3,348
Undressed	6,064	6,766	7,827
Wool, Greasy	14,206	15,338	17,605
Woollen Manufactures	21,278	19,842	21,918
Commodities Not Available for Publication (b)	45,853	50,804	67,951
Not Elsewhere Included	3,849	3,550	3,730
Total Exports	221,288	234,848	275,332

(a) As well as new and used vehicles, item includes business and tourists' vehicles leaving State.

(b) Commodities comprising this item are: aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard, and plywood.

The next table shows the quantities of the principal commodities exported and has been compiled, as far as this is practicable, to match the table of values.

Exports of Principal Commodities by Sea and Air—Quantities

Commodity (a)	Unit of Quantity	1961-62	1962-63	1963-64
Butter	cwt.	149,053	169,232	163,676
Fish—Crayfish	cwt.	15,835	19,216	16,837
Other	cwt.	33,505	34,832	22,180
Fruit—Apples	'000 bush.	5,959	5,370	6,569
Pears	'000 bush.	435	300	493
Preserved in Liquid	'000 lb.	24,634	18,477	12,950
Pulped	'000 lb.	4,997	4,275	4,226
Dried	'000 lb.	901	643	475
Hops	'000 lb.	2,893	2,379	2,025

Exports of Principal Commodities by Sea and Air—Quantities—*continued*

Commodity (a)	Unit of Quantity	1961-62	1962-63	1963-64
Meat—Beef	cwt.	67,498	98,445	118,181
Lamb and Mutton	cwt.	62,366	63,591	67,305
Pork	cwt.	15,952	22,725	20,368
Potatoes (Fresh)	ton	36,558	28,794	33,515
Preserved Vegetables (including Dried) ..	'000 lb.	23,403	34,881	52,765
Fertilizers	ton	45,634	59,321	34,218
Sheepskins—with Wool	'000 lb.	6,539	6,130	7,218
without Wool	'000 lb.	185	231	187
Other Hides and Skins (excluding Furred) ..	'000 lb.	2,431	2,962	3,518
Metals, Refined—Cadmium	ton	237	250	350
Copper	ton	10,576	10,001	15,131
Zinc	ton	130,911	134,149	132,081
Ores and Concentrates—Silver-Lead	ton	24,324	26,540	28,757
Tin	ton	1,241	1,362	1,943
Motor Cars and Commercial Vehicles (b) ..	no.	9,573	10,093	10,693
Timber—Dressed	'000 sup. ft.	11,382	13,726	14,736
Undressed	'000 sup. ft.	45,418	46,864	56,662
Wool, Greasy	'000 lb.	27,209	26,278	25,086

(a) Principal commodities not available for publication comprise aluminium, alumina, ferro-manganese, calcium carbide, cement, paper, paper pulp, stationery, hardboard, plywood, and confectionery.

(b) As well as new and used vehicles, item includes business and tourists' vehicles leaving State.

Exports of Selected Commodities

The following table shows, in summary form, total exports of selected commodities since 1939-40:

Exports of Selected Commodities by Sea and Air

Commodity	Unit of Quantity	1939-40	1949-50	1959-60	1964-65
QUANTITY					
Butter	cwt.	55,428	42,886	154,789	204,200
Fresh Fruit	'000 bush.	3,910	2,963	4,210	5,193
Potatoes	ton	117,700	84,896	44,001	27,699
Hops	'000 lb.	1,584	1,767	2,955	1,716
Wool, Greasy	'000 lb.	9,092	9,101	27,977	30,329
Sheepskins	'000 lb.	2,285	3,307	7,090	5,821
Refined Copper	ton	11,738	4,253	7,624	14,741
Refined Zinc	ton	70,909	80,704	113,853	139,032
Timber (Dressed and Undressed) ..	'000 sup. ft.	50,858	62,136	75,403	80,466
VALUE (\$'000)					
Butter .. .. .	..	742	1,278	5,390	5,914
Fresh Fruit .. .. .	..	2,270	4,348	9,490	14,260
Potatoes .. .. .	..	1,558	3,302	1,656	3,230
Hops .. .. .	..	236	610	1,928	1,166
Wool, Greasy .. .. .	..	1,376	6,202	15,254	16,593
Sheepskins .. .. .	..	186	816	2,078	1,945
Woollen Manufactures .. .. .	..	2,674	5,540	17,524	24,139
Refined Copper .. .. .	..	1,416	1,478	5,022	9,541
Refined Zinc .. .. .	..	2,856	9,964	22,922	37,327
Ores and Concentrates .. .. .	..	2,144	4,076	5,952	10,257
Timber (Dressed and Undressed) ..	..	1,238	2,930	8,952	12,811

Further Information on Trade Statistics

In this chapter, it is only possible to give a broad outline of Tasmania's trade. The following cover the subject in greater detail:

The "Trade and Shipping" part of the "Statistics of the State of Tasmania"—this annual publication of the Tasmanian Office of the Bureau of Census and Statistics deals in detail with the State's interstate trade and includes an integration of interstate and overseas trade.

"Overseas Trade"—this annual publication of the Commonwealth Statistician gives considerable detail on the State's overseas trade.

RETAIL TRADE IN TASMANIA

Introduction

The statistics in this section have been obtained from the Australian Census of Retail Establishments (last conducted in 1961-62) and, for non-Census years, from the quarterly Australian Survey of Retail Establishments.

Census of Retail Establishments

Retail Censuses were taken in respect of the years ended 30th June, 1948, 1949, 1953, 1957 and 1962. The information collected in each Census is extensive and provides details of retail trading in local government areas, in statistical divisions, and in special "statistical retail" areas. The Census information is also used as a bench-mark for designing a sample representative of all retail establishments.

Survey of Retail Establishments

Quarterly estimates of the value of retail sales have been calculated from the September quarter 1950, inclusive, by means of sample surveys. The information collected quarterly in each Survey is much less detailed than in the Censuses and provides estimates only for the State as a whole.

Census of Retail Establishments, 1961-62

Sales by Type of Business

There are two ways in which the value of retail sales may be presented: either as totals for particular commodity groups, or as totals for particular types of business. For example, information from the Retail Census provides a total of the value of all *groceries* sold by all types of retail business, and also a total of the value of all commodity groups sold by *grocers*; the two totals will normally differ since the classification *grocer* is applied to an establishment in which *groceries* are the principal but not necessarily the only line of sale (e.g. a country *grocer* may also sell commodities such as petrol).

Types of Business, 1961-62

The following table shows the number of retail establishments recorded at the Census of 1961-62; they are classified according to the type of business (determined by the value of the principal line, or lines, of goods sold). Also shown are the total retail sales during 1961-62, for the various types of business. Comparative figures are given of the results of the Census of 1956-57. In the table, the item "Grocers" is concerned with *grocers'* total sales of all commodity groups; in more general terms, the turnover figures relate to total sales by each type of business, and give no precise indication of total sales of any particular commodity group.

**Number of Retail Establishments and Value of Retail Sales of Goods by
Type of Business, 1956-57 and 1961-62**

Type of Business	Number of Retail Establishments		Value of Retail Sales	
	1956-57	1961-62	1956-57	1961-62
	No.	No.	\$'000	\$'000
Food Stores—				
Grocers	1,100	1,046	33,998	42,190
Butchers	295	357	11,280	13,742
Fruiters	90	93	2,476	2,966
Bakers	151	158	3,434	4,364
Confectioners and Milk Bars	208	307	3,454	5,872
Cafes	20	59	152	564
Fishmongers and Poulterers	32	44	542	880
Other Food Stores	30	53	806	1,404
Hotels, Tobacconists, &c.—				
Hotels, Wine Saloons, &c.	308	311	15,622	18,382
Tobacconists	23	21	762	456
Tobacconists and Hairdressers	64	51	430	328
Department Stores, Clothiers, Drapers, &c.—				
Department Stores	6	6	7,322	11,964
Clothiers and Drapers	304	336	23,850	24,768
Footwear Stores	61	78	2,980	3,712
Hardware, Electrical Goods, Furniture Stores, &c.—				
Domestic Hardware Stores	57	43	2,284	2,328
Electrical Goods, Radios and Musical Instruments Stores	130	157	5,416	8,976
Furniture and Floor Coverings Stores	77	80	5,008	6,594
Other Goods Stores—				
Chemists	96	124	3,398	5,894
Newsagents and Booksellers	99	121	3,780	5,018
Sports Goods Stores	20	23	640	984
Watchmakers and Jewellers	56	54	1,182	1,252
Cycle Stores	11	8	114	100
Florists and Nurserymen	33	44	422	410
Other Types of Business	77	120	1,742	2,770
Total (excluding Motor Vehicle Dealers, Garages and Service Stations, &c.)	3,348	3,694	131,094	165,918
Motor Vehicle Dealers, Garages and Service Stations, &c.—				
New Motor Vehicle Dealers, Garages and Service Stations	414	476	38,034	40,096
Used Motor Vehicle Dealers	25	48	4,442	11,912
Motor Parts and Tyre Dealers	36	52	1,510	2,006
Total Motor Vehicle Dealers, Garages and Service Stations, &c.	475	576	43,986	54,014
Grand Total	3,823	4,270	175,080	219,932

Sales of Commodities in Statistical Divisions

The next table gives details of retail sales in each statistical division and in the auxiliary groupings, Hobart and Suburbs and Launceston and Suburbs. A further dissection is provided for a special area of Hobart, designated the "inner city" for the purpose of the Census, and defined as the blocks bounded by Campbell, Brisbane, Barrack and Macquarie Streets. In this table, the value totals for each area are based on commodity totals, i.e. the column for the motor vehicle commodity group relates exclusively to sales of motor vehicles, motor

parts, tyres, petrols, lubricants and other "motor commodities", irrespective of the type of business making the sale. This contrasts with the presentation in the previous table, where the turnover figures for the motor vehicle group of establishments related to their sales of *all* commodities, including soft drinks, cigarettes, detergents and other "non-motor commodities".

Value of Retail Sales of Goods in Each Statistical Division and in City and Suburban Districts, 1961-62

Area	Total Number of Retail Establish- ments	Value of Retail Sales (\$'000)		
		All Commodities Excluding Motor Vehicles, &c. (a)	Motor Vehicles, &c. (a)	All Commodities
STATISTICAL DIVISIONS				
South Central—				
Hobart—Inner City Area ..	425	36,070	10,310	46,380
Remainder of South Central ..	779	26,266	12,798	39,064
Total	1,204	62,336	23,108	85,444
North Central	728	34,592	14,494	49,086
North Western	995	33,676	11,804	45,480
North Eastern	344	7,790	1,082	8,872
North Midland	160	3,668	542	4,210
Midland	131	3,098	404	3,502
South Eastern	246	6,398	888	7,286
Southern	336	9,464	1,076	10,540
Western	126	5,038	474	5,512
Total Tasmania ..	4,270	166,060	53,872	219,932
CITY AND SUBURBAN DISTRICTS				
Hobart and Suburbs—				
Hobart—Inner City Area ..	425	36,070	10,310	46,380
Remainder, Hobart and Suburbs ..	928	30,720	13,374	44,094
Total Hobart and Suburbs ..	1,353	66,790	23,684	90,474
Launceston and Suburbs	805	36,274	14,814	51,088
Remainder of State	2,112	62,996	15,374	78,370
Total Tasmania	4,270	166,060	53,872	219,932

(a) Sales as commodity group totals; "motor vehicles, &c." includes petrol, lubricants, parts, tyres, &c. as well as new and used vehicles.

Quarterly Retail Sales Estimates

Each quarter, returns of retail sales are collected from a fraction (or sample) of all the retail businesses recorded in the most recent Census of Retail Establishments, the fraction being selected to represent the field covered by the Census. This sample is varied from time to time to make provision for "new" establishments opening up, "old" establishments closing down and "old" establishments changing type ("old", in this context, relates to businesses as recorded at the most recent Census of Retail Establishments). From the returns made by the sample establishments, estimates are calculated quarterly of the total volume of retail sales, and also the total sales of broad groups of commodities. The following table presents, as annual totals, the results of the quarterly Surveys for a five-year period:

Estimated Value of Retail Sales of Goods by Commodity Groups (a)
(\$'000)

Commodity Group	1960-61	1961-62	1962-63	1963-64	1964-65
Groceries	27,960	28,550	29,260	31,340	33,100
Butchers' Meat	13,550	13,860	14,960	15,110	16,570
Other Food	19,840	20,050	21,420	20,960	22,910
Beer, Wine, Spirits	16,570	16,980	16,880	18,400	19,230
Clothing, Drapery, Piece Goods	29,690	30,120	30,660	32,280	34,460
Footwear	5,030	5,250	5,350	5,700	5,790
Domestic Hardware	4,110	4,080	4,420	4,360	4,470
Electrical Goods	10,820	10,650	11,730	11,280	11,440
Furniture, Floor Coverings	7,310	7,220	7,810	8,130	8,750
Chemists' Goods	6,760	7,480	7,680	8,310	9,630
Newspapers, Periodicals, &c.	5,240	5,490	5,490	5,890	6,270
Other Goods (b)	16,550	16,330	17,210	17,390	19,130
Total (excluding Motor Vehicles, &c.)	163,430	166,060	172,870	179,150	191,750
Motor Vehicles, Parts, Petrol, &c.	53,490	53,872	63,130	70,220	74,880

(a) Survey results for all years except 1961-62, the year of the most recent Census of Retail Establishments.

(b) Includes sports goods, jewellery, cycles, flowers, plants, &c.

MARINE BOARDS AND HARBOUR TRUSTS

Introduction

Tasmania has a number of ports for handling overseas vessels; they are sited on the Derwent and Huon rivers in the south (Hobart and Port Huon); on the Tamar in the north (Beauty Point, Inspection Head and Bell Bay); on the Mersey (Devonport) and in Emu Bay (Burnie), both on the north-west. All overseas ports provide approximately 30 feet or more of water at berths; the wooden Ocean Pier in Hobart gave an extreme depth of 63 feet but the structure was destroyed by fire in 1948 and has since been replaced by concrete wharves giving depths up to 39 feet.

Interstate and intrastate trade passes through the main ports and is carried on as well through ports at Launceston, Strahan, Stanley, Smithton, Ulverstone, Currie (on King Island) and Lady Barron (on Flinders Island).

This section deals primarily with the Marine Boards which control the harbours but a brief description is given of the four main ports.

Tasmania's two oldest ports date, in embryo at least, from 1804 when Lieutenant-Colonel Collins chose Sullivan's cove as the site for the Derwent settlement and, later in the same year, when Lieutenant-Colonel Paterson disembarked near George Town on the Tamar.

Port of Hobart

Location

The approach to the Derwent and the Port of Hobart, is made through a very wide strait between Cape Queen Elizabeth (Bruny Island) and Cape Raoul (Tasman Peninsula), approximately 30 miles south-east from the city. The mouth of the Derwent, three and a half miles wide, lies 12 miles south-east of the port which is built upstream on the western bank in a U-shaped cove; the opposite bank lies one and a half miles away to the east at this point. The shores of the Derwent and the arms of the cove act as natural breakwaters.

Historical

When Collins landed, the waters of the Derwent lapped just below the site of the present Franklin Square and the Wellington Rivulet discharged near Hunter Island which was rapidly converted into a peninsula by the construction of a causeway. (A food processing factory now stands on the site of Hunter Island.) The first wharves were built on the former island but ships still needed to anchor off shore and unload cargo into smaller craft. By the 1830's, more substantial wharves had been provided allowing large ships to berth alongside; the major construction was on the opposite side of Sullivan's Cove, sheltered by Battery Point, and is today known as Princes Wharf. The subsequent development of the main port has, to a large degree, been confined within these early limits, i.e. from land reclaimed seaward from Hunter Island and southward to the Battery Point foreshore.

Description

The present main port of Hobart is extremely compact, being U-shaped and with only 2,000 feet or less separating the two arms. The southern arm is devoted to Princes Wharf with berths numbered one to four; the centre contains Elizabeth, Kings and Queens Piers while the northern arm is made up of the Macquarie wharves with berths one to four and a special tanker berth. It is literally true that the port and the city are one, the principal buildings such as Parliament House, the Town Hall and the General Post Office all being only a stone's throw from the harbour; in fact, the Parliament assembles one hundred yards from the sea in what used to be the Customs House of an earlier era. Shoreward from Queens and Kings Piers are Victoria and Constitution Docks, enclosed harbours for smaller vessels; annually competitors in the Sydney-Hobart Yacht Race moor alongside the wharves in Constitution Dock within a few hundred yards of the finishing line.

All wharves and sheds in the main port are of concrete construction, the first step in this direction being the rebuilding of Elizabeth St. Pier in 1934, followed by the three-stage conversion of Princes Wharf. The urgency of this type of modernisation was emphasised in 1948 when fire destroyed the wooden Ocean Pier No. 2 shed and the outer 80 feet of berth.

The main recent development has been connected with roll-on roll-off type vessels for which special provision has had to be made. Princes Wharf No. 1 berth was converted into a specialised terminal with drive-on ramp and vehicle marshalling area, the "Seaway Queen" and "Seaway King" first berthing there in June and August, 1964, respectively. To accommodate the new Sydney-Hobart roll-on roll-off vessel "Empress of Australia", extensive land reclamation was carried out to the south of Princes Wharf No. 3 berth and the new facility, named No. 4 berth, involved a further wharf, a drive-on ramp, an extensive marshalling area and a terminal building. The "Empress" began the new service in January, 1965.

The most striking feature of the Port of Hobart is the ease with which large vessels can be brought to berth. Tides present no problem, the rise and fall being four feet at most, and no dredging of approach channels has ever been necessary. During World War II, the aircraft carrier "Saratoga" (33,000 tons) and the "Ile de France" (43,000 tons) berthed without tug assistance. All the essentials for a port were there before the first settlers arrived—subsequent development has concentrated on land reclamation and the construction of piers and wharves to take advantage of the deep water available close inshore.

Subsidiary Ports

In addition to the main port in the heart of the city, there are a number of subsidiary outlets serving the south of the State. On the west bank of the Huon River near Geeveston is Port Huon, located in the centre of the principal

orcharding area and used mainly for fruit exports. In the Derwent itself, two and a half miles upstream from the main port, is a tanker berth at Selfs Point where bulk petrol and oil are stored; tankers pass under the 150 feet high navigation span of the Tasman Bridge on their way. A mile upstream from Selfs Point are the private wharves of the Electrolytic Zinc Company Ltd. at Risdon. Nearly twenty miles upstream from the main port is the plant of Australian Newsprint Mills Ltd. at Boyer from which newsprint rolls are carried downstream by barge and tug.

The authority controlling the main port and Port Huon is the Hobart Marine Board.

Port of Launceston

Location

Launceston lies nearly forty miles upstream at the headwaters of the Tamar which discharges into Bass Strait between Low and West Heads; although the mouth of the Tamar is four miles wide, the river follows a sinuous course marked by many bends, and narrows to less than 300 yards in some stretches near the city. Tides are large, the rise and fall being from 10 feet to 12 feet according to location and silting occurs in the upper reaches which receive the discharge of the South Esk and North Esk Rivers.

Because of the limitations of the upper Tamar near Launceston, development of the port shows a pattern different from that of Hobart where all interstate and overseas berths are concentrated in the one area. In Launceston, the possibilities of the Tamar have been exploited by decentralisation, the present main outlets being:

- (i) Kings Wharf; interstate berths in Launceston itself immediately downstream from the junction of the North Esk and Tamar Rivers;
- (ii) Beauty Point Wharf; overseas berths on the western bank approximately eight miles upstream from the mouth of the Tamar;
- (iii) Inspection Head Wharf; overseas berths on the western bank approximately half a mile downstream from Beauty Point Wharf;
- (iv) Bell Bay Wharves; these include a tanker berth, a general cargo and passenger berth and the special cargo wharf serving Comalco Aluminium Ltd., operator of a nearby refinery. The Bell Bay site is on the eastern shore opposite Beauty Point.

The port has also had to make provision for the operation of roll-on roll-off ferry services and Bell Bay is the chosen terminal, the "Empress of Australia" making alternate Sydney-Tasmania voyages to Hobart and Bell Bay.

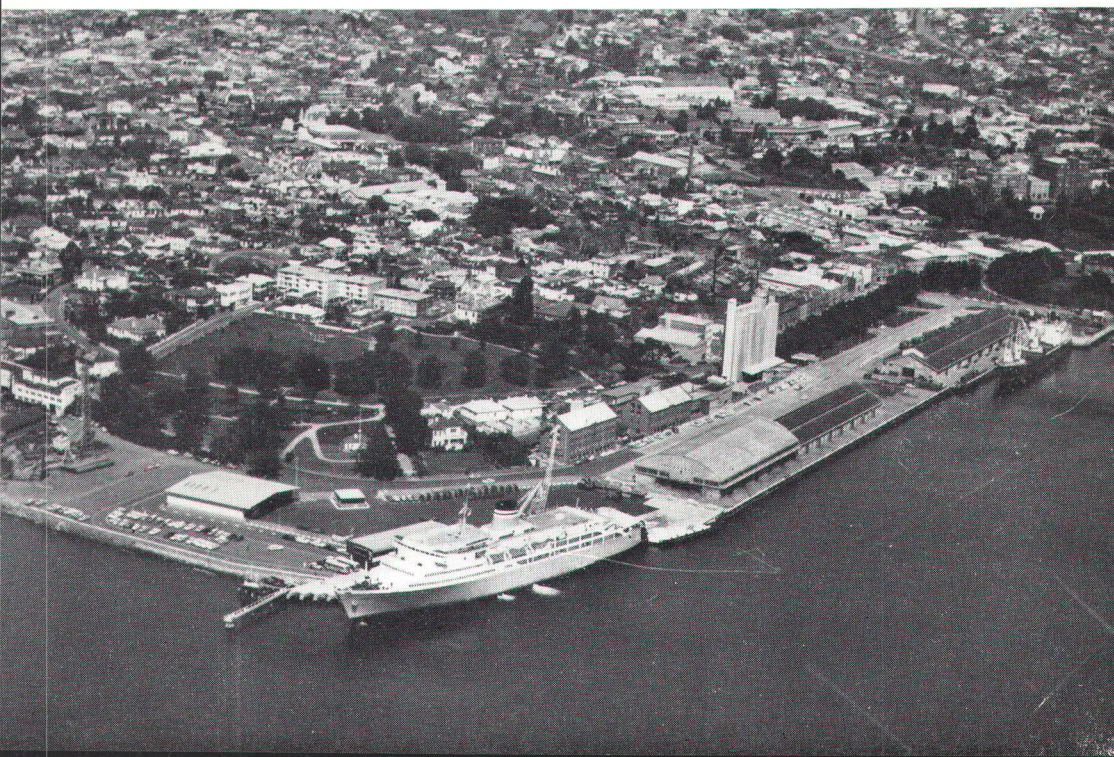
The Hunter Plan

Unlike the Hobart port approaches, the channels leading from the mouth of the Tamar were once difficult to navigate. In 1912, Mr. W. H. Hunter, consulting engineer for the Manchester Ship Canal, inspected the river and laid down a master plan for future development. He saw the need for carrying out work in two sections—for the overseas berths in the lower reaches, and for interstate berths at Launceston. Bell Bay and Beauty Point were his recommendations for overseas berths and he advised that work should be undertaken to remove obstructions known as Bombay Rock, Garrow Rock, and Porpoise Rock and to dredge Anchorage Shoal. He wrote: "If the work of removing obstructions is carried out as proposed, I believe that an approach will be provided to the new wharf which cannot be surpassed in any port of the world, as there are few ports indeed, in which an unobstructed channel from which



*Tapping ferro-manganese alloy at Bell Bay plant of Tasmanian Electro-Metallurgical Company Pty. Ltd.
(The Mercury)*

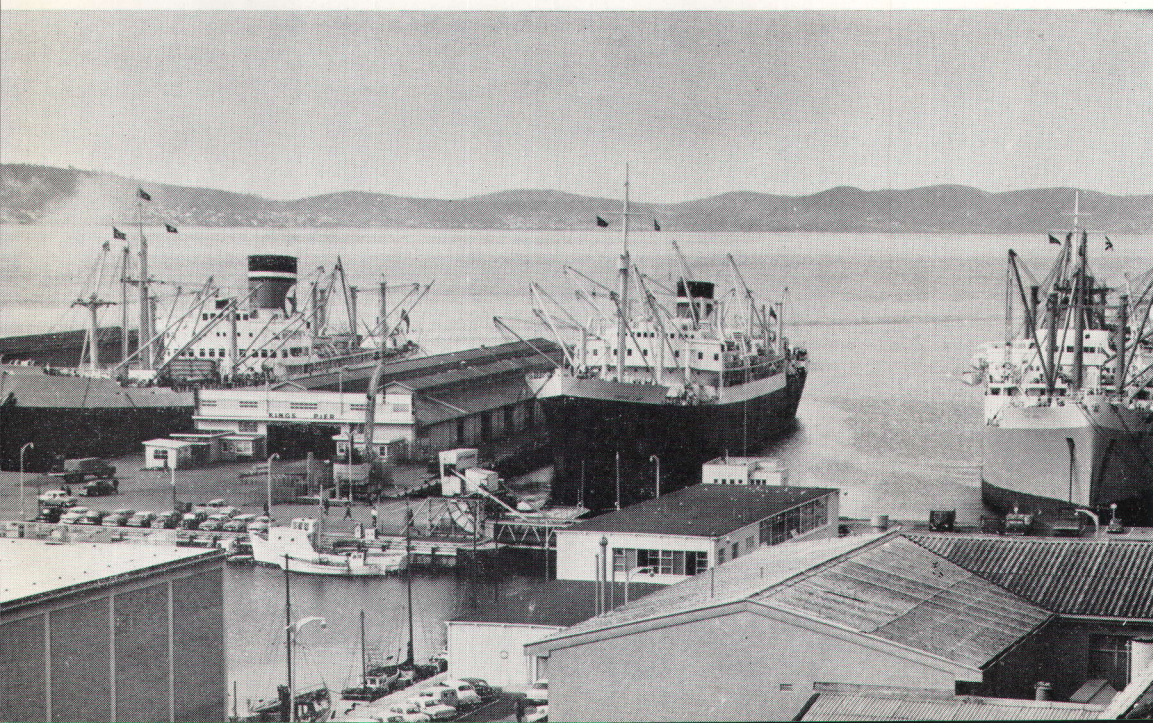
*Hobart's Princes Wharf with roll-on roll-off facilities at each end.
(Dept. of Film Production)*





*Tasman Bridge linking Hobart to its eastern suburbs.
(Dept. of Film Production)*

*Portion of Port of Hobart.
(Don Stephens)*



all dangerous eddies have been eliminated, with a depth of 30 feet at first and afterwards 36 feet at low water, and of from 40 to 46 feet at high water, and a minimum width of 1,200 feet can either be formed or maintained." For up-river navigation he also recommended the removal of Whirlpool Rock, the improvement of Whirlpool Reach and the formation of a new channel between Rosevears and Town Point.

The Hunter plan has been quoted in considerable detail because, in large degree, it has been the blue-print followed by the Launceston Marine Board over the last fifty years and its gradual implementation has produced a first class port on the Tamar. Dredging, however, both to maintain and improve existing channels, remains a continuous process. Much of the Hunter plan was carried out by "Ponrabell II", a bucket-type dredger able to deepen to 45 feet. ("Ponrabell I", sailing to Launceston in World War I from Glasgow, was sunk by the German raider, "Emden".)

Port of Devonport

Location

The Port of Devonport lies close inside the mouth of the Mersey River which, unlike the Derwent and the Tamar, is navigable for only a short distance. The Mersey has a rise and fall of tide approximating nine feet and recent hydrographic survey indicated a maximum tidal flow of 2.1 knots. The river was always a natural harbour for small craft but its development as an overseas port has required extensive dredging and engineering works, including elimination of the tidal bar.

Description

The original river mouth was approximately three-quarters of a mile wide but this has been narrowed to just over 400 yards by an anti-silting barrier thrown out into the sea from the eastern bank. The overseas berths are located on the western bank about a mile upstream from the river's artificial mouth while the special terminal for the roll-on roll-off vessel "Princess of Tasmania" lies opposite on the eastern bank. The "Princess" has maintained a Bass Strait service based on Devonport since 1959 and its berth includes a wharf, a stern-loading drive-on ramp, an extensive vehicle marshalling area and a capacious terminal building. Thousands of tourists and their vehicles pass through this terminal each year.

The possibility of further development has not been exhausted; while the main berths have been made along the western bank, there is nearly a mile reserved on the opposite bank for the construction of future wharves. Reclamation of shallow reaches is a continuous process, much of the dredged silt being pumped ashore behind retaining walls; dredging is necessary for maintenance of depth at existing wharves, in channels and basins but there is sufficient operating capacity to undertake the development of new berths.

A new facility completed in 1964 was a cold store berth, the cold store being able to hold dairy produce, frozen meat and vegetables at 0°F to 10°F; included in this plant is a shock freezer with a daily capacity of 500 lamb carcasses or five tons of quarter beef. The four main freezing and holding rooms have 180,000 cubic feet of storage; in addition there is a chiller, a pre-freezing room for dairy products, a dairy products and meat holding room and an air-conditioned grading and inspection room.

The authority controlling the port, the Devonport Marine Board, assumed responsibility from 1st January, 1963 for operating the port at Ulverstone, previously administered by a local Harbour Trust.

The Port of Burnie

Location

The ports of Hobart, Launceston and Devonport all lie within the shelter of rivers but the Port of Burnie, on Emu Bay, was built out into the open sea in the lee of Blackmans Point; immediately to the west of the point is a beach on which breaks the short surf of Bass Strait which can produce very rough seas, the nearest land being the Victorian coast 200 miles to the north.

Description

The shelter necessary for all-weather use of the port was provided by a 1,250 foot breakwater anchored to Blackmans Point, and running out to sea with a south-east orientation. The wharves are thus protected by the point and by the breakwater from swells coming in from the west or north, the only two quarters from which heavy seas are feared. Ocean Wharf is constructed immediately in the lee of the breakwater, the two structures appearing as one, and other berths are provided by piers parallel to the breakwater and lying further south.

Future development of the port cannot be undertaken without the provision of further protection, and construction is now well under way on an island breakwater sited north-east from the end of Ocean Wharf. The breakwater, consisting of concrete caissons 1,600 feet long, is oriented south-east and is calculated to give ample protection for up to 2,000 feet of berthage south of existing piers. One interesting feature is the planned use of the lee of the island breakwater for a tanker berth, the products being pumped to land storage along a submarine pipeline.

In 1961, special facilities were provided to handle the roll-on roll-off vessel "Bass Trader" and the port is also used by the "Empress of Australia" which makes a return voyage to Sydney via Bell Bay and Burnie. (The alternate route worked by the "Empress" is Sydney-Hobart.)

Port Latta (Under Construction)

Construction work on the Savage River iron ore project began in early 1966 and is programmed for completion by the end of 1967. Work is proceeding simultaneously at two centres: (i) development of the mines at the Savage River; (ii) development of Port Latta at Brickmakers Bay. The main construction programme requires a concentrating plant at the mines, a 51-mile pipeline to pump the watered concentrate to the coast, a pellet-making plant at Port Latta and an offshore terminal in deep water for exporting the pellets. The whole project will require an outlay of \$62m.

Cargo of this nature (pellets) is not loaded into small ships and provision has to be made for bulk ore carriers of 60,000 to 90,000 tons capacity; hence deep water is a major consideration. From the start of 1968, about 2.25m tons will be shipped annually.

The loading facility will consist of a four-foot wide conveyor belt which will carry pellets to two swivel loaders located a mile offshore; here vessels moored in 52 feet of water will take on pellets, the system having a discharge capacity of about 3,000 tons per hour.

As a preliminary measure, a shelter harbour has been built at the west end of Crayfish Creek beach to accommodate floating cranes, barges, work boats, personnel carriers and the like. A major item of equipment is a 200-ton lift capacity Pacific Atlas crane towed 10,000 miles from the U.S.A. The crane

will position drill rigs for driving the steel piles carrying the conveyor belt structure 30 feet above water level. Port contractors are Pomeroy—Holland—Gerwick, an American Australian partnership.

Constitution of Marine Boards and Harbour Trusts

Introduction

Relatively early in Tasmania's history, it was decided that the control and operation of any port was best put in the hands of citizens who had a personal interest in its proper management, and, to this end, port administration was deliberately made a function of local government; the State Government, by legislation, defined the powers and duties of the new authorities it created but the detailed administration, including financial management, was then very much left to the Boards and Trusts. This is still the position today.

Establishment of Boards

Operation of Tasmania's chief ports ceased to be a direct function of the government of the colony in 1857 when legislation was passed to set up the marine boards of Hobart and Launceston. Each board consisted of five wardens; the Mayor and the Collector of Customs were *ex officio* wardens, the remaining three members being appointed as nominees of the respective Chambers of Commerce. In 1867, the Governor was empowered to create other Boards, such bodies to consist of three wardens appointed by the Governor; within a year, boards had been constituted under the titles Mersey, Circular Head and Table Cape.

Boards of Hobart and Launceston

The *Marine Boards Act* 1889 created a special electorate for the Hobart and Launceston boards, the nine wardens for each to be elected by ship-owners, importers and exporters. The respective Collectors of Customs were required to compile annually rolls of these users of the ports and the number of votes each elector could exercise was proportional to his financial interest; for example, an exporter of goods valued \$400 to \$3,999 had one vote, of \$4,000 to \$9,999 two votes, and of over \$10,000, three votes. Importers received similar voting powers in proportion to the wharfage paid while ship owners' votes were proportional to tonnage of their vessels. It was further provided that three wardens should retire annually and the Master Warden be elected by board members. By an amending Act in 1895, the voting powers of importers were placed on the same basis as those exercised by exporters and were divorced from wharfage paid.

The special electorate just described is still in existence today and continues to elect the wardens of the Hobart Marine Board; the scale of values affecting the number of votes to be exercised by importers and exporters remains unchanged also. However, in the case of Launceston Marine Board, the system of the special electorate was abolished in 1902 and all Launceston citizens on the rolls for the House of Assembly became eligible to cast single votes, a right extended in 1910 to citizens in the other municipalities bordering the Tamar. In 1916, with the adoption of the Hunter scheme for improvements affecting the whole length of the river, changes were made to increase the number of wardens by representatives from the bordering municipalities but the *Marine Act* 1921 reduced the number of wardens to five, restricted eligibility for standing as warden to citizens of Launceston and changed the voting qualification so that Marine Board electors had to be those qualified to vote at an election of aldermen for the City of Launceston. This system still operates today.

Boards at Other Ports

Under the Act of 1889, the wardens of Marine Boards other than Hobart and Launceston had been appointed by the Governor but gradually systems of election were introduced: (i) Strahan, 1898—vote given to municipal electors of Strahan, Zeehan and Queenstown, each town selecting two wardens and a further four wardens being nominees of the Governor; in 1903, the elective principle was abolished and the Board was to consist of three nominees of the Governor, a principle re-iterated in the *Marine Act* 1921; (ii) Mersey (Devonport), 1903—nine wardens to be chosen by electors of three towns and nine road districts; (iii) Table Cape (Burnie), 1910—seven wardens chosen by electors of Emu Bay and Table Cape; (iv) Circular Head (Stanley), 1915—five wardens to be elected.

The present system of appointing or electing wardens is summarised as follows:

Election or Appointment of Port Authorities

Authority	Number of Wardens	System of Election or Appointment of Wardens
Hobart Marine Board	9	Special electorate of ship-owners, importers and exporters
Launceston Marine Board ..	5	Electors of City of Launceston as for election of aldermen
Burnie Marine Board	8	} Municipal electors within proclaimed areas
Devonport Marine Board ..	9	
Circular Head Marine Board ..	5	
King Island Marine Board ..	5	} Nominees of the Governor
Flinders Island Marine Board ..	3	
Strahan Marine Board	3	
Smithton Harbour Trust ..	5	Municipal electors within proclaimed areas

Jurisdiction of Marine Boards and Harbour Trusts

The jurisdiction of the various Boards and Trusts is not confined to their immediate port area, and the whole Tasmanian coast is partitioned between the various authorities; for example, Hobart Marine Board's jurisdiction is defined as "from South-West Cape round the southern and eastern coasts to Cape Portland", i.e. the whole southern and eastern coastline.

The continuous jurisdiction of the remaining authorities, starting at Cape Portland in the far north-east, is as follows: (i) Launceston—on to Badger Head (west of Tamar); (ii) Devonport—on to west bank of Leven River; (iii) Burnie—on to east bank, Sisters Creek; (iv) Circular Head—on to $41\frac{1}{2}^{\circ}$ S. latitude on west coast; (v) Strahan—on to South-West Cape; (vi) King Island—the island coastline; (vii) Flinders Island—the coasts of the Furneaux and Kent groups of islands; (viii) Smithton—the entrance to Duck Bay with Circular Head jurisdiction extending east and west. (Smithton Harbour Trust area is an enclave within the Circular Head area.)

Finances of Marine Boards and Harbour Trusts

The principal sources of revenue of the port authorities are shipping tonnage rates and import and export wharfage rates; other sources are charges for pilotage services and the hiring of equipment. Expenditure is summarised under the heading "works and services" which includes the provision of ordinary port services (e.g. pilotage, tug assistance, &c.), the maintenance of the port (e.g. dredging, &c.) and the improvement of the port (e.g. new wharfs, new berths, &c.). To the degree that insufficient revenue is available to finance

port improvements, the authorities borrow money subject to State Treasury approval, the Treasury acting on behalf of the Australian Loan Council and implementing its annual agreement as to the approved level of new semi-government authority loans.

The following table shows the combined revenue and loan account transactions for each authority during 1964-65:

Marine Boards and Harbour Trusts
Receipts and Expenditure—All Funds, 1964-65
(\$'000)

Particulars	Authority—									Total
	Hobart	Launceston	Devonport	Burnie	Circular Head	King Island	Strahan	Flinders Island	Smithton	
Opening Balance	1,547	445	552	1,941	2	14	17	11	9	4,538
Receipts—										
Revenue Account—										
Wharfage Charges	740	595	561	566	14	26	27	12	1	2,542
Hire of Plant and Equipment ..	291	83	30	169	..	1	..	..	..	574
Rents ..	32	235	95	36	2	..	1	..	..	401
Other Charges for Services (a) ..	231	111	103	119	3	4	6	2	..	579
Government Subsidy ..	34	..	..	..	11	..	..	..	..	45
Other Receipts (b)	175	562	68	111	1	1	1	..	..	919
Total ..	1,503	1,586	857	1,001	31	32	35	14	1	5,060
Loan Account—										
Loan Raisings ..	..	650	600	1,574	..	18	..	..	..	2,842
Other Receipts ..	..	1	103	..	..	..	..	..	..	104
Total ..	..	651	703	1,574	..	18	..	..	..	2,946
Total Receipts	1,503	2,237	1,560	2,575	31	50	35	14	1	8,006
Expenditure—										
Revenue Account—										
Works and Services ..	859	484	511	371	2	6	14	6	2	2,255
Interest ..	123	134	184	338	7	4	2	..	..	792
Redemption and Sinking Fund	166	85	129	110	11	3	3	2	..	509
Administration ..	158	62	81	71	9	12	11	3	1	408
Other (c) ..	179	686	118	58	1	3	4	1	..	1,050
Total ..	1,485	1,451	1,023	948	30	28	34	12	3	5,014
Loan Account—										
Capital Works ..	..	619	468	2,188	..	15	..	..	..	3,290
Total Expenditure	1,485	2,070	1,491	3,136	30	43	34	12	3	8,304
Closing Balance ..	1,565	612	621	1,380	3	21	18	13	7	4,240

(a) Includes dues, tonnage rates, pilotage, mooring and slipway fees, weighbridge revenue and charges for light, power, telephone, water, storage and cleaning.

(b) Includes receipts from sales of assets, interest on investments, and the net receipts of deposit, stores and superannuation accounts.

(c) Includes expenditure on insurance, workers' compensation, superannuation contributions, payroll tax, rents and rates.

The next table summarises the transactions of all Marine Boards and Harbour Trusts for a five-year period:

**Marine Boards and Harbour Trusts
Receipts and Expenditure—All Funds
(\$'000)**

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Opening Balance	1,908	2,440	3,868	5,485	(r) 4,538
Receipts—					
Revenue Account	3,419	3,694	4,469	5,046	5,060
Loan Account—					
Loan Raisings	1,560	1,930	2,167	2,631	2,842
Other Receipts	19	9	6	11	104
Total Receipts	4,998	5,633	6,642	7,688	8,006
Expenditure—					
Revenue Account—					
Works and Services	1,662	1,492	1,485	1,294	2,255
Interest	692	810	939	655	792
Redemption & Sinking Fund }	315	352	365	590	509
Administration	364	427	777	400	408
Other				1,311	1,050
Total	3,033	3,081	3,566	4,250	5,014
Loan Account—					
Capital Works	1,433	1,124	1,459	4,364	3,290
Total Expenditure	4,466	4,205	5,025	8,614	8,304
Closing Balance	2,440	3,868	5,485	4,559	4,240

(r) Revised.

Loan Debt and Borrowing

The loan debt of the Marine Boards and Harbour Trusts has increased by \$12,300,000 since 1954-55 when it stood at \$4,782,000. The following table shows the growth of this debt in total and gives individual details for the four principal authorities:

**Marine Boards and Harbour Trusts
Loan Debt of Principal Authorities At End of Year
(\$'000)**

Authority	1954-55	1960-61	1961-62	1962-63	1963-64	1964-65
Hobart	1,534	2,534	2,404	2,768	2,866	2,700
Launceston	535	1,232	1,583	1,684	2,215	2,783
Devonport	1,086	2,403	2,625	(a) 2,928	(a) 3,415	(a) 3,886
Burnie	1,444	2,802	3,955	5,050	5,984	7,473
Other	183	327	326	241	257	257
State Total	4,782	9,298	10,893	12,671	14,737	17,099

(a) Includes debt of Ulverstone Harbour Trust, the port having been taken over by Devonport Marine Board from 1st January, 1963.

At 30th June, 1965, the loan debt of each authority was: Hobart, \$2,700,242; Launceston, \$2,783,490; Devonport, \$3,885,686; Burnie, \$7,473,020; Circular Head, \$142,848; King Island, \$80,594; Strahan, \$28,870; Flinders, \$4,478. Smithton Harbour Trust had no debt.

The next table shows a summary from 1954-55 of annual borrowings and analyses the aggregate debt according to creditor; it will be observed that all debt to the State Government has now been redeemed.

Marine Boards and Harbour Trusts
Loan Raisings, Loan Debt and Sinking Funds
(\$'000)

Year	Loan Raisings During Financial Year			Loan Debt at End of Financial Year			Total of Sinking Funds at End of Financial Year (a)
	From State Govt.	From Other Sources	Total	To State Govt.	To Other Creditors	Total	
1954-55	500	500	134	4,648	4,782	..
1955-56	516	516	108	5,029	5,137	..
1956-57	524	524	87	5,334	5,421	28
1957-58	648	648	68	5,806	5,874	27
1958-59	1,125	1,125	22	6,723	6,745	..
1959-60	1,552	1,552	20	8,019	8,039	..
1960-61	1,560	1,560	18	9,280	9,298	..
1961-62	1,930	1,930	16	10,877	10,893	7
1962-63	2,167	2,167	..	12,671	12,671	24
1963-64	2,631	2,631	..	14,737	14,737	53
1964-65	2,842	2,842	..	17,099	17,099	85

(a) Sinking funds maintained by Boards and Trusts for debt redemption purposes.

SHIPPING AT TASMANIAN PORTS

System of Record

Vessels using Tasmanian ports can be thought of as oversea, interstate or intra-state but their inward and outward movement, in the tables that follow, is classified according to the type of voyage and not according to the type of vessel. The following shows the manner in which voyages are described (both arrivals, "entries", and departures, "clearances"):

Type of Voyage

Oversea Vessels	Interstate Vessels	Intra-state Vessels
(i) Oversea Direct		
(ii) Oversea via Other State (a)		
(iii) Oversea via Ports in same State		
(iv) Interstate Direct (a)	(iv) Interstate Direct	
(v) Interstate via Ports in same State	(v) Interstate via Ports in same State	
(vi) Intra-state	(vi) Intra-state	(vi) Intra-state

(a) For definition of this term, see the table that follows.

To show the total entries and clearances for any individual port, it is necessary to add all categories from (i) to (vi) inclusive for each type of vessel. However, to show the total entries and clearances for a State, and for the result to reflect the volume of the State's shipping relations with other States and oversea countries, it is necessary to add only categories (i), (ii) and (iv) for oversea and interstate vessels. Finally, to show the entries and clearances affecting Australia's shipping relations with other countries, only category (i) need be taken into account.

In the tables that follow, the term "Oversea and Interstate" is used to indicate that the movements described are restricted to categories (i), (ii) and (iv) for oversea and interstate vessels. The classifications are applied in such a way that, in terms of categories (i), (ii) and (iv), ships are included as arrivals at the *first* Tasmanian port of call only, and departures only at the *last* port of call in Tasmania, i.e. the coastal movement of shipping is excluded.

Categories Illustrated

The term 'interstate direct' is applied to the movements of oversea vessels in certain circumstances and the next table illustrates the system of classification, a hypothetical vessel being engaged on a London-Sydney-London voyage:

Itinerary of an Oversea Vessel on the Australian Coast

Particulars of London-Sydney-London Voyage	Recorded as—	
	For State and for Australia (a)	For the States (a)
Vessel with Sydney as final port of call—	Oversea direct (V)	Interstate direct (V)
Enters Melbourne from U.K.		
Clears Melbourne for Hobart		
Enters Hobart from Melbourne		
Clears Hobart for Sydney	Oversea direct (V)	Interstate direct (T)
Enters Sydney from Hobart		
Clears Sydney for Hobart		
Enters Hobart from Sydney		
Clears Hobart for Melbourne	Oversea direct (V)	Interstate direct (T)
Enters Melbourne from Hobart		
Clears Melbourne for U.K.		

(a) Letters in brackets indicate the State recording the entry or clearance.

From the table, it will be seen that entries are classified according to the State or country of origin and that clearances are classified according to State or country of destination.

In the case of an interstate ship making a round voyage, Melbourne-Hobart-Launceston-Devonport-Melbourne, only the entrance into Hobart and the departure from Devonport would be classified in Tasmanian records as "Interstate Direct", the remaining movements being classified as "Interstate via Ports in same State".

Tonnage of Vessels

The size of a vessel may be expressed as: (i) gross tonnage, i.e. the total volume of enclosed space converted at one ton per 100 cubic feet; (ii) net tonnage, i.e. the enclosed volume of cargo or passenger space similarly converted at 100 cubic feet per ton; (iii) deadweight tonnage, i.e. the weight the vessel can carry, including bunkers and stores, expressed in tons of 2,240 lb. (or, more technically, the difference from the displacement light to the displacement when loaded to the summer deadline). *Net tonnage* is the concept

generally used in the tables in this section, but since it can give a misleading impression of the size of ships which have a function other than carrying passengers and cargo (e.g. a tug has no net tonnage), some figures are given for deadweight tons and tons gross also.

Oversea and Interstate Shipping

The following table shows the total annual number of vessels entering Tasmanian ports, and their net tonnage, for the period commencing 1954-55. The figures are restricted to entries classified as "oversea and interstate" and exclude coastal movements.

Shipping—Oversea and Interstate (a)
Total Vessels Entering Tasmanian Ports

Year	Vessels Entered		Year	Vessels Entered	
	Number	Net Tons		Number	Net Tons
1954-55 ..	1,081	1,619,692	1960-61 ..	1,354	2,546,476
1955-56 ..	1,030	1,585,547	1961-62 ..	1,533	3,042,052
1956-57 ..	1,161	1,737,334	1962-63 ..	1,614	3,473,984
1957-58 ..	1,241	1,872,012	1963-64 ..	1,508	3,346,157
1958-59 ..	1,257	1,966,301	1964-65 ..	1,472	3,411,793
1959-60 ..	1,308	2,287,182			

(a) For definition, see "System of Record" in introduction.

In the introduction, "System of Record", it was indicated that oversea and interstate shipping included three categories of voyages, namely oversea direct, oversea via other Australian States and interstate direct. The next table shows entries and clearances in terms of these three categories for a five-year period:

Shipping—Oversea and Interstate
Total Vessels Entering and Clearing Tasmanian Ports

Classification of Entry	1959-60	1960-61	1961-62	1962-63	1963-64
ENTERED—NUMBER					
Oversea Direct	50	60	72	83	81
Oversea via Other Australian States	185	194	238	331	296
Interstate Direct (a)	1,073	1,100	1,223	1,200	1,131
Total	1,308	1,354	1,533	1,614	1,508
ENTERED—NET TONS ('000)					
Oversea Direct	162	218	268	288	275
Oversea via Other Australian States	868	856	1,099	1,447	1,352
Interstate Direct (a)	1,257	1,472	1,675	1,739	1,719
Total	2,287	2,546	3,042	3,474	3,346

**Shipping—Oversea and Interstate
Total Vessels Entering and Clearing Tasmanian Ports—continued**

Classification of Entry	1959-60	1960-61	1961-62	1962-63	1963-64
CLEARED—NUMBER					
Oversea Direct	31	42	28	49	44
Oversea via Other Australian States	199	177	247	314	295
Interstate Direct (a)	1,074	1,122	1,278	1,260	1,148
Total	1,304	1,341	1,553	1,623	1,487
CLEARED—NET TONS ('000)					
Oversea Direct	139	196	135	199	189
Oversea via Other Australian States	896	794	1,101	1,341	1,294
Interstate Direct (a)	1,207	1,534	1,781	1,906	1,782
Total	2,242	2,524	3,017	3,446	3,265

(a) Includes both overseas and interstate vessels proceeding "interstate direct".

The next table has been compiled to show the dissection of the previous arrivals according to individual Tasmanian ports. The figures for the ports do not include all arrivals but only such as are included in the categories appropriate to "oversea and interstate".

**Shipping—Oversea and Interstate
Vessels Entering Each Tasmanian Port**

Port (a)	1959-60		1960-61		1961-62		1962-63		1963-64	
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
Hobart	399	1,025	429	1,139	494	1,331	475	1,215	454	1,172
Launceston	246	434	204	359	307	583	368	786	307	762
Burnie	192	380	233	496	206	484	244	759	282	749
Currie	76	10	85	17	101	18	103	26	66	10
Devonport	246	380	260	468	330	572	327	631	316	598
Smithton	15	2	8	1	8	1	6	1	7	1
Stanley	38	9	41	15	13	9	22	12	19	11
Strahan	52	40	60	46	54	42	55	42	56	43
Ulverstone (b)	44	7	32	5	19	2	13	2	..	..
Lady Barron .. .. .	..	..	2	(c)	1	(c)	1	(c)	1	(c)
Total	1,308	2,287	1,354	2,546	1,533	3,042	1,614	3,474	1,508	3,346

(a) The names of the ports refer to the towns in which the controlling Marine Boards and Harbour Trusts were located.

(b) As from January, 1963, the port of Ulverstone came under control of Devonport Marine Board but its shipping was recorded separately for 1962-63.

(c) Under 500 tons.

The shipping movements shown in the previous table do not represent the total shipping entering each port; to obtain this total it is necessary to add in

the movement of vessels engaged in coastal and in purely intra-state voyages. The following table, compiled on this expanded basis, shows total shipping entering each Tasmanian port for a five-year period:

**Shipping—Oversea, Interstate and Intra-State
Vessels Entering Each Tasmanian Port**

Port (a)	1959-60		1960-61		1961-62		1962-63		1963-64	
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
Hobart ..	488	1,237	481	1,303	577	1,520	591	1,382	546	1,362
Launceston ..	519	566	490	528	604	796	580	987	512	904
Burnie ..	316	550	330	641	365	686	393	980	402	929
Currie ..	146	34	238	26	214	25	185	32	134	21
Devonport ..	364	463	352	556	428	668	403	720	401	688
Smithton ..	18	3	8	1	10	1	10	1	14	1
Stanley ..	108	26	98	28	94	50	106	44	81	36
Strahan ..	63	48	65	50	57	43	60	46	62	48
Ulverstone (b) ..	88	12	73	9	61	6	57	5	..	..
Lady Barron ..	(c)	(c)	107	6	123	8	150	13	146	15

(a) Location of controlling Marine Board or Harbour Trust.

(b) As from January, 1963, the port of Ulverstone came under control of Devonport Marine Board but its shipping was recorded separately for 1962-63.

(c) Not available.

The next table compares vessels entering Tasmanian ports with those entering the ports of other States:

**Shipping—Oversea and Interstate
Vessels Entering Ports, Australian State Totals**

State	1959-60		1960-61		1961-62		1962-63		1963-64	
	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)	No.	Net Tons ('000)
N.S.W. ..	3,679	13,825	3,822	15,434	3,969	16,631	3,769	16,402	4,023	17,948
Victoria ..	2,983	11,694	3,054	12,788	3,210	13,525	3,177	13,588	3,360	14,616
Queensland ..	1,591	5,284	1,726	5,803	1,692	5,834	1,829	6,541	2,012	7,166
S.A. ..	1,759	6,745	1,950	7,613	1,958	7,646	1,945	7,886	2,167	9,486
W.A. ..	1,404	7,268	1,590	8,689	1,674	8,929	1,520	8,240	1,561	8,580
Tasmania ..	1,308	2,287	1,354	2,546	1,533	3,042	1,614	3,474	1,508	3,346
Australia (a) ..	12,842	47,335	13,607	53,059	14,150	55,831	13,963	56,386	14,755	61,478

(a) Total includes Northern Territory not specified in the table.

Considering that Tasmania has only approximately 3.3 per cent of the Australian population, the proportion of shipping entering its ports is relatively high and serves to emphasise the dependence of an island State upon sea transport.

Cargo Shipped and Discharged

Most of the cargo handled in the ports is recorded in terms of tons of 2,240 lbs. However, some additional cargo, mainly bulky commodities, is shipped and recorded on the basis of each 40 cubic feet of space used represent-

ing one ton measurement. As totals derived from conversion to a common weight, or alternatively, to a common volume, would not be accurate, entries in each of the two units are recorded and published separately.

The following table gives a summary of cargo discharged and shipped in overseas and interstate trade for a six-year period:

Cargo Shipped and Discharged
All Tasmanian Ports—Overseas and Interstate Shipping

Year	Discharged				Shipped			
	Overseas		Interstate		Overseas		Interstate	
	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)
1959-60 ..	293	38	665	401	151	129	458	399
1960-61 ..	367	26	769	501	105	138	383	569
1961-62 ..	252	29	721	511	163	180	401	466
1962-63 ..	301	46	1,015	439	204	141	583	468
1963-64 ..	326	43	1,033	449	154	253	630	384
1964-65 ..	389	72	1,015	597	195	198	662	518

In the next table, details are shown of the cargo handled at the individual ports in 1963-64. The classification "overseas" and "interstate" relate either to the origin or destination of the cargo.

Cargo Shipped and Discharged
Individual Tasmanian Ports—Overseas and Interstate Shipping, 1963-64

Port	Overseas		Interstate		Total	
	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)	Tons Weight ('000)	Tons Measurement ('000)
DISCHARGED						
Hobart	122	22	440	97	562	119
Launceston	167	14	170	124	337	138
Burnie	35	7	230	6	265	13
Currie .. ..	..	..	11	3	11	3
Devonport	2	..	157	219	159	219
Smithton .. ..	..	..	1	..	1	..
Stanley .. ..	..	..	2	..	2	..
Strahan .. ..	..	..	22	..	22	..
Total	326	43	1,033	449	1,359	492
SHIPPED						
Hobart	80	213	176	96	256	309
Launceston	29	21	85	91	114	112
Burnie	42	14	100	63	142	77
Currie .. ..	..	..	5	2	5	2
Devonport	3	5	169	132	172	137
Smithton .. ..	..	..	..	..	..	..
Stanley .. ..	..	..	19	..	19	..
Strahan .. ..	..	..	76	..	76	..
Total	154	253	630	384	784	637

Registration of Shipping

The following table shows the country of registration of the vessels entering all Tasmanian ports over a five-year period:

Country of Registration of Shipping
Vessels Entering All Tasmanian Ports—Oversea and Interstate

Vessels Registered At Ports In—	1959-60		1960-61		1961-62		1962-63		1963-64	
	No.	Net Tons (‘000)	No.	Net Tons (‘000)	No.	Net Tons (‘000)	No.	Net Tons (‘000)	No.	Net Tons (‘000)
Commonwealth Countries—										
Australia ..	958	836	996	960	1,122	1,177	1,097	1,235	1,051	1,287
United Kingdom ..	154	864	163	879	187	1,005	221	1,168	231	1,227
Hong Kong ..	13	47	10	31	8	30	9	39	4	18
New Zealand ..	34	45	29	43	18	26	22	36	29	56
Other ..	33	39	14	25	11	44	9	28	6	22
Total ..	1,192	1,831	1,212	1,938	1,346	2,282	1,358	2,506	1,321	2,610
Foreign Countries—										
Denmark ..	8	35	8	38	18	75	23	113	12	41
Netherlands ..	22	61	30	97	34	106	47	120	51	147
France ..	..	..	1	4	1	4	1	4	2	7
Germany, West ..	1	1	5	22	24	78	33	97	16	58
Japan ..	4	14	7	33	4	18	12	16	13	14
Liberia ..	2	10	1	6	1	8	11	68	2	13
Norway ..	34	150	36	177	44	198	54	254	34	170
Panama ..	6	35	10	60	11	70	4	22	3	21
Sweden ..	21	70	29	98	35	128	42	166	35	141
U.S.A. ..	13	63	10	45	10	49	22	71	10	52
Other ..	5	17	5	28	5	26	7	37	9	72
Total ..	116	456	142	608	187	760	256	968	187	736
Grand Total ..	1,308	2,287	1,354	2,546	1,533	3,042	1,614	3,474	1,508	3,346

Vessels on Tasmanian Registers

The Merchant Shipping Act 1894 (Imperial) under which vessels are registered in Australia, does not make it compulsory to register vessels under 15 tons burden if engaged in river or coastal trade.

The following table shows the number and tonnage of Tasmanian vessels on register:

Total Vessels on Registers—Tasmania

Year Ended 31st December	Steam		Motor (including Auxiliary)		Sailing		Dredges and Hulks, &c., Not Self- Propelled		Total	
	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons	No.	Net Tons
1960 ..	22	1,125	134	13,995	42	693	3	690	201	16,503
1961 ..	23	2,122	135	14,004	42	693	3	690	203	17,509
1962 ..	23	2,122	138	14,037	42	693	3	690	206	17,542
1963 ..	23	2,122	143	14,329	42	693	3	690	211	17,834
1964 ..	23	2,122	152	16,682	42	510	3	690	220	20,004
1965 ..	21	2,060	154	16,724	41	507	3	690	219	19,981

TRANSPORT COMMISSION**Origin of Commission**

The State railways were operating at a considerable loss in the period following World War I and this difficulty was accentuated by the increasing use of commercial road transport. The 1938 report of the Commonwealth Grants Commission contained the following comment: "A large State may conceivably stand the cost of duplicated transport, but it is obvious that Tasmania cannot. We believe that the Tasmanian Government appreciates this position and it can only be met by initiative and decision". At the time of this report, railways were controlled by a Minister, motor vehicle registration and licensing of drivers were Police Department functions and public vehicle licensing was administered by a Transport Committee drawn from several departments.

Following an enquiry, Parliament passed the *Transport Act* 1938 establishing a new authority headed by a Commissioner and two Associate Commissioners, the associates now being the General Manager of the Railways and the Administrator of Road Transport. This Act and subsequent amending legislation had the effect of creating an administrative authority unique in Australia because the management and control of all public transport, with minor exceptions, became the responsibility of one central authority (government omnibus services in Hobart, Launceston and Burnie and the privately-owned Emu Bay Railway are the exceptions). The functions of the Commission are as follows:

- (i) the control and management of the Government railways;
- (ii) the regulation and licensing of commercial road transport (i.e. of "public vehicles");
- (iii) the registration and taxation of motor vehicles and the licensing of drivers;
- (iv) the control and operation of Government intra-state ferries and shipping services;
- (v) the control and operation of its own road transport services (passengers).
- (vi) the administration of regulations under the Traffic Act concerning road traffic control;
- (vii) the administration and control of State aerodromes;
- (viii) the licensing and control of intra-State air transport.

In brief, the Transport Commission emerges as a *taxing authority*, an *administrative body* and a *business undertaking*.

Control of Commission

The Commission, by Section 6 (2) of the Act, is free from political control but provision exists for the Minister for Transport to appeal to the Governor if dissatisfied with decisions of the Commission. Consultation with the Minister and the Government regarding major policy matters is close so that the appeal provision (Section 33) has very rarely been invoked. Section 34 allows the Governor to direct the Commission to reduce certain fares and freights but, to the extent that such direction causes a revenue loss, the Treasurer is obliged to re-imburse the Commission; the formula for re-imbursement requires either acceptance of the Commission's original charges as the economic cost of the service or substitution of the Auditor-General's calculation of the economic cost, should the level of the Commissioner's original charges be a matter of dispute.

Commission's Financial Operations

The revenue of the Commission comes from three main sources:

- (1) own business undertakings—railways, road transport services, ferries and an engineering plant ("tool annexe");
- (2) taxation and licensing receipts—motor vehicle taxation and registration, drivers' licence fees and fees related to public vehicles control;
- (3) grants from Consolidated Revenue, including proceeds of State land tax.

The financial transactions of the Commission are summarised in the tables that follow. For simplicity of presentation, the transactions are arranged in two sets of accounts, firstly Trading and Profit and Loss, secondly Taxation, Licensing, &c. It should be noted that the net loss in the Trading and Profit and Loss Account for any year becomes a charge on Consolidated Revenue in the following year; also, that most of the proceeds from motor taxation, registration, licensing, &c. are passed to Consolidated Revenue, the Commission retaining only the costs of collecting such revenues and the costs and expenses incurred in connection with the control of, and the provision of facilities for, motor traffic. A distinction is drawn, however, between public vehicle fees and public vehicle licensing; the latter charges are taken into the Profit and Loss Account as an offset against net trading loss.

The amounts paid into Consolidated Revenue by the Commission are transferred by the Treasurer into the State Highway Trust Fund, thereby providing that taxes and charges levied on motorists and commercial road transport shall be devoted to road construction and road maintenance.

Transport Commission—Trading and Profit and Loss Account (\$'000)

Particulars	1961-62	1962-63	1963-64
REVENUE			
Railways	5,614	5,830	5,918
Road Transport Services	442	436	424
Marine Services	140	154	164
Tool Annexe	192	238	232
Land Tax	1,094	1,258	1,554
Public Vehicle Licensing (Transfer)	58	90	90
Other Revenue	68	62	84
Net Loss (a)	1,490	840	816
Total	9,098	8,908	9,282
EXPENDITURE (b)			
Railways	7,084	6,900	7,190
Road Transport Services	418	398	394
Marine Services	218	198	204
Tool Annexe	178	214	218
General, including Administration	232	236	286
Interest	968	962	990
Total	9,098	8,908	9,282

(a) To be charged against Consolidated Revenue in following year.

(b) Provisions for depreciation included in each item (excluding interest).

The remaining transactions can be summarised as follows:

**Transport Commission—Motor Taxation Collection, Licensing, &c.
(\$'000)**

Particulars	1961-62	1962-63	1963-64
REVENUE			
Motor Tax	2,152	2,480	2,662
Public Vehicle Licensing, Fees, &c.	322	330	344
Registrations, Licences, &c.	624	666	723
Refunds	— 20	— 26	— 24
Total	3,078	3,450	3,705
EXPENDITURE			
Profit and Loss Account (Transfer) (a)	58	90	90
Paid to Consolidated Revenue (b)	2,508	2,832	3,019
Administration, Traffic Control, &c.	512	528	596
Total	3,078	3,450	3,705

(a) Receipts from Public Vehicle Licensing paid into Profit and Loss Account.

(b) For payment to State Highway Trust Fund.

Annual Loss

In the Profit and Loss Account, State land tax is taken as a revenue item, thus reducing the net loss. In effect, the Commission receives annually two grants from the State, firstly all collections of land tax and secondly, reimbursement of the previous year's net loss. The actual burden on Consolidated Revenue, over the last three years, has been: 1961-62, \$2,583,012 (£1,291,506); 1962-63, \$2,097,904 (£1,048,952); 1963-64, \$2,369,422 (£1,184,711). The accounts reveal that the loss occurs principally in respect of railways but the case for continued subsidisation is argued on a number of grounds:

- (1) abandonment of all railway operations would still leave the State with liability for annual debt charges exceeding \$1,000,000 (£500,000);
- (2) heavy bulk freights now carried by rail would rapidly break up present road surfaces if they were transferred to road haulage; all the money saved by closing the railways and possibly other funds as well would have to be spent in increased road maintenance or road improvements;
- (3) for certain types of freight, rail transport is still considered more economical than road haulage; closing the railways might add appreciably to the costs of many primary and secondary producers.

Economic operation of the State railways in Tasmania is difficult for the following reasons: (i) low density of traffic; (ii) difficult physical conditions, due to hilly and mountainous country; (iii) small population; (iv) short hauls; (v) lack of rich hinterland, and the situation of most towns and large scale industries on the sea coast; (vi) general small scale production and diversity of products; (vii) high shipping and other marketing costs borne by Tasmanian industries, which limit the ability of the Commission to pass on increased railway costs to users; (viii) numerous ports and short distance between ports.

Public Vehicle Licensing

The following types of licence are issued by the Commission to operators of public vehicles:

- Aircraft*—for aircraft used as public vehicles on intra-state journeys.
- Coach*—for vehicles used for the carriage of passengers and goods between places along a specified route.
- Omnibus*—for vehicles seating more than eight passengers and operating within a specified area.
- Cab*—for vehicles seating eight or less passengers and operating within a specified area (i.e. plying or standing for hire).
- Hire-Car*—for vehicles seating eight or less passengers and operating between any places in the State; also for the same vehicles standing or plying for hire within a specified area.
- Carrier*—for vehicles engaged in carriage of goods between places on a specified route.
- Cart*—for vehicles engaged in the carriage of goods within a specified area. (Despite the word “cart”, the licence applies to petrol driven vehicles.)
- Ancillary*—for vehicles engaged in the carriage of goods in the course of the trade or business of the owner (excluding farmers, general “carters” and “carriers”). Such licences apply to operation within a specified area.

Licences are issued for three-year periods for all public vehicles except those classed as ancillary or hire-car, in which case annual renewal is required. The decision of the Commission to grant or refuse a licence, or to impose conditions or restrictions on a licence, is subject to appeal to the Public Vehicle Licensing Appeal Tribunal. The factors considered by the Commission in issuing a licence include:

- (1) suitability of the routes over which the applicant proposes to provide the service;
- (2) the extent to which the needs of the proposed routes, traffic areas, or districts, are already adequately served;
- (3) the extent to which the proposed service is necessary or desirable in the public interest;
- (4) the traffic needs of the district or traffic area, including provision of adequate and efficient services, the elimination of unnecessary and unremunerative services, and the co-ordination of all forms of transport with rail;
- (5) the condition of the roads over which the proposed service is to be provided;
- (6) the fitness of the applicant to hold the licence.

Public Vehicle Control

For the purposes of transport control, Tasmania is divided into eight traffic areas so designed that competitive operations of vehicles licensed for one area only are confined to short hauls. From the earlier section on licensing, the following classification emerges:

- (1) licensed for one traffic area only: cabs, omnibuses, ‘carts’ and ancillary vehicles;
- (2) licensed for specified routes: coaches and carriers;
- (3) licensed for whole State: hire-cars.

In the section that follows, some charges are quoted as decimals of a penny. Despite the introduction of decimal currency, charges are still computed on this basis, the final conversion to dollar and cent units being made when the operator makes payment. (For 0.5d., equivalent is 0.4167 cents, for 0.4d., 0.3333 cents.)

Vehicles licensed for a specific traffic area cannot be used outside it without first obtaining a permit for which out-of-area fees are payable as determined by the Commission. The Traffic Act provides for maximum permit fees, in relation to goods vehicles, of 0.5d. per cwt. of unladen weight for each mile over which the goods are carried. However, the maximum charge determined by the Commission is 0.4d. per cwt. Thus, for a vehicle of an unladen weight of three tons engaged on an out-of-area journey of 120 miles, the permit fee would be \$24 or £12 (i.e. 0.4d. x 60 x 120). If goods are carried on the return journey, a further permit fee is payable. In the example quoted, the permit fee at 20 cents (2s.) per mile virtually doubles the cost of operating the vehicle; it is sufficiently high to prevent most licence holders from travelling outside their area in competition with the railways or with licensed carrier services.

Rebates

In actual fact, it is not always necessary for operators to pay full permit fees as described in the previous paragraph since percentage rebates on full fees may be claimed. Such rebates have relation to the suitability of the goods for transport by rail or licensed carrier and are greatest for certain perishable goods; in general, the shorter the journey, the greater the rebate percentage.

Nominal Fees

The policy of the Commission is to avoid unnecessary duplication of transport, and full fees are charged if the goods in question can be handled as conveniently and efficiently by rail or by an existing licensed carrier service. The Commission grants permits at nominal fees of \$1.00 (10s.) per trip up to 50 miles and \$2.00 (£1) per trip over 50 miles if it is satisfied that road transport is more suitable for any of the following reasons: (1) the dimensions of the load are outside railway clearance; (2) the perishable nature of the goods makes them unsuitable for rail transport; (3) time element; (4) shortage of rail waggons; (5) unreasonably high cost of rail transport compared with road transport, because of extra handling or other reasons; (6) special circumstances.

It is estimated that less than a third of out-of-area trips are at full fees, the balance being for nominal fees or at rebates from 30 to 80 per cent of the full fee.

Ancillary Vehicles

In the case of small vehicles used by tradesmen, and small service and delivery trucks, it would be poor administration to require the payment of out-of-area permit fees for every trip; accordingly, an annual permit fee is charged, once the degree of competition with rail and licensed carrier services has been determined. In the case of ancillary vehicles with a carrying capacity of more than one ton, normal out-of-area permit fees are payable, subject to rebate in the same way as if the owner held a cart licence.

Passenger Vehicles

Commercial passenger vehicles operating out-of-area may be competing with existing rail or licensed coach services, in which case they can be charged fees at a maximum of 0.5d. per passenger seat per mile. If no such competition exists, out-of-area fees are charged at \$0.50 (5s.) for each 25 miles; in the case of round trips, the mileage is halved in applying the charge formula.

Percentage Fees—Coaches and Carriers

Coaches and carriers receiving licences to operate over routes which extend beyond one traffic area are required to pay a percentage tax on annual revenue, the extent of the tax being proportional to the assessed competition with rail services. The Commission's own road passenger services, by the provisions of the Act, are required to pay the same tax as any private operator on the same route. Charges vary from one to 22 per cent, depending on the degree of competition with rail services.

Transport Commission Road Transport Services

The Commission operates road passenger and road freight services, on which it is obliged to make a profit. Should the Auditor General indicate that these services have been carried on at a loss in the previous financial year, the Act provides that parliamentary approval must be obtained for the Commission to continue the services. The Commission is also obliged to obtain parliamentary approval before initiating new services.

In 1963-64, the Commission's passenger bus services operated over 742 route miles, not only linking the principal towns but also providing inter-urban and special services for workers. The Commission's coaches ran more than one million vehicle-miles.

RAILWAYS**Introduction**

Tasmania has a three foot six inch gauge Government railway system based on a route mileage of a little under 500 miles. The capital indebtedness of the system at 30th June, 1964 was \$19,928,568 but this understates the position since the debt, in 1936-37, was written down by \$9,476,000; the annual debt charges associated with this latter amount were made a charge on Consolidated Revenue. The last year in which earnings exceeded working expenses was 1933-34 and this did not indicate profitable running since interest charges exceeded the small operational surplus. The peak year of operational loss was 1956-57 when working expenses, *excluding* interest and depreciation, exceeded earnings by \$1,364,924. In 1963-64, the operational loss had been drastically reduced to \$716,610 but interest and depreciation provisions together imposed an additional burden of \$1,441,384.

The Tasmanian experience of a Government railway system heavily dependent on State grants for its continued existence is by no means unique in Australia today. In 1963-64, all State systems received government grants to offset their operating losses or to enable them to meet depreciation, interest and sinking fund obligations; in terms of accepted accounting, the State systems have generally not been a source of profit for many years. The difficulties of the Tasmanian system are aggravated by a number of factors, the principal of which are: (i) operational disadvantage of short routes; (ii) no rail link with Victoria; even if a rail ferry were provided, gauge differences would impose an almost insuperable barrier; (iii) effectiveness of road transport in interstate trade with introduction of roll-on roll-off ferries; (iv) effectiveness of road and air transport in competition for passengers.

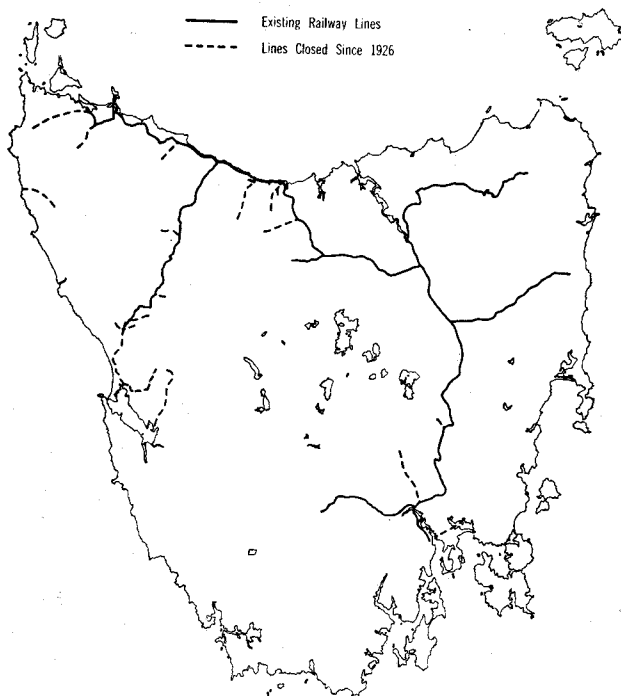
The railway system in Tasmania is frequently criticised for its failure to "pay its way". It can be established, however, that railway development, before the days of mechanised road transport, was an essential pioneering activity; without such development, the State would not have had a railway debt but neither would it have had many of its present farms and factories or even its present level of population. The section that follows traces out the origin of the present system.

Historical

The first railway in Tasmania was opened for traffic in 1871 (construction having begun three years earlier on a 45-mile line from Deloraine to Launceston). It is significant that only one-ninth of the original capital was subscribed by the shareholders of the Launceston and Western Railway Company, the remainder, \$800,000 (£400,000), having been raised by the Government. The line was laid in broad gauge (five foot three inch) without regard for the fact that narrower gauge might be needed in the more mountainous parts of the island. Within a year of opening, the company was in financial difficulties and the line was taken over by the Government. At the date of starting construction, the island's population had not passed 100,000.

The second line was a more ambitious undertaking—123 miles of three foot six inch track from Hobart to Western Junction, linking there with the five foot three inch line—and involved considerable problems of contour survey because of the high plateau lying across the route. The Tasmanian Main Line Railway Company opened the line for traffic in 1876. The problem of differing gauges on the two systems was overcome by laying a third rail on the ten miles of the five foot three inch track from Western Junction to Launceston, the Main Line Company having running rights over this stretch. In 1890, the Government purchased the line for \$2,213,000 (£1,106,500).

The next line to open for traffic (1884) was owned by the Emu Bay and Mount Bischoff Railway Company which converted an existing horse-tramway to three foot six inch gauge; the 48 mile line connected Waratah to the port of Burnie, the primary objective being to ship out freight from the rich Mount Bischoff tin mines.



Railway Systems in 1926 and 1964

By 1890, the essential framework of the present railway system on three foot six inch gauge had been laid, and future growth involved track extensions mainly in directions already determined in the first twenty years of rapid construction. The following table shows the pattern of development in 1890 and compares it with that of the present system. Under "route" is shown firstly the terminals of individual tracks in 1890 and secondly, the present extent of the same tracks. Only construction dates before 1890 have been quoted since later extension of track was carried out in several stages.

Government and Private Railways
Route Mileage of Lines Open—1890 and 1964

Route	Area Served	Year Open For Traffic	Mileage of Lines Open	
			1st Jan., 1890	30th June, 1964
Launceston to Devonport ..	North West	1885	(a) 82	..
Launceston to Smithton ..	" "	..	..	(a) 179
Hobart to Western Junction ..	North-South link	1876	(b) 123	(a) 123
Burnie to Waratah	West Coast	1884	(b) 48	..
Burnie to Zeehan (c) .. ..	" "	..	..	(b) 88
Conara to St. Marys	Fingal Valley	1886	(a) 46	(a) 46
Bridgewater to Glenora ..	Derwent Valley	1888	(a) 24	..
Bridgewater to Florentine ..	" "	..	..	(a) 44
Launceston to Scottsdale ..	North East	1889	(a) 47	..
Launceston to Herrick ..	" "	..	..	(a) 85
Other Branches .. ..	..	..	(a) 4	(a) 23
Total Route Miles Open	..	..	374	588
Government .. ..	..	..	203	500
Private .. ..	..	..	171	88

(a) Government.

(b) Private.

(c) Service to Zeehan ceased August, 1965, and terminal is now Rosebery.

Growth and Decline

The main task of developing and maintaining railways fell to the Tasmanian Government after it purchased the Hobart-Western Junction line in October, 1890. The following table shows the mileage of Government-owned railways from 1895 to the present:

Government Railways—Route Mileage of Lines Open

Year (a)	Route Miles Open	Year (a)	Route Miles Open	Year (a)	Route Miles Open
1895 ..	420	1920 ..	629	1945 ..	642
1900 ..	439	1925 ..	673	1950 ..	613
1905 ..	463	1930 ..	679	1955 ..	605
1910 ..	470	1935 ..	645	1960 ..	538
1915 ..	533	1940 ..	644	1964 ..	500

(a) 31st December, 1895 and 1900; 30th June for subsequent years.

The peak of development was reached in 1930 when 679 miles were open for traffic; since then, many branch lines have been closed down, the competition of road transport making their operation uneconomic. Route mileage has actually declined to what it was fifty years ago at the outbreak of World War I. Examples of lines now closed down are: Brighton to Apsley, 27 miles; Bellerive to Sorell, 15 miles; Zeehan to Strahan, 29 miles.

West Coast Lines

The discovery of tin at Mt. Bischoff in 1871 had given the stimulus needed for the Burnie-Waratah line completed in 1884. Further mineral discoveries—silver-lead at Zeehan (1882), copper at Mt. Lyell (1883), silver-lead at Read-Rosebery, Farrell and Dundas—called attention to the isolation of the West Coast and made good transport to the sea a matter of urgency. Possible ports were Strahan and Burnie.

First in the field was the Tasmanian Government which opened a 29-mile line from Zeehan to Strahan in 1892. By 1899, a private line stretched 22 miles from Queenstown to Strahan, the owners being the Mt. Lyell Mining and Railway Company. Strahan, lying inside Macquarie Harbour, was not considered an ideal port because of the difficulties of entering "Hells Gates", the shallow entrance from the open sea, and attention shifted to the possibility of linking the mines direct to the port of Burnie. In this period of expansion set in motion by the West Coast mineral discoveries, even Hobart and Launceston were considered as possible terminals for lines from the Mt. Lyell fields and a large section of a Hobart-Queenstown track was actually surveyed. (The present road for cars is nearly 160 miles long and passes through formidable mountain country.) The initiative was finally taken by a private company which decided in favour of Burnie as the logical terminal.

In 1897, the newly formed Emu Bay Railway Company decided to lease the 48-mile Burnie-Waratah line and commenced construction at Guildford, ten miles east of Waratah. Within three years, a route of 88 miles between Burnie and Zeehan came into operation. It was then possible to make the trip Queenstown to Burnie, using the Mt. Lyell service to Strahan, the government service to Zeehan and the Emu Bay service to Burnie. The Mt. Lyell line ran over such prohibitive gradients that, for $4\frac{1}{2}$ miles, locomotives employed the "Abt" cog-and-rack system; parts of the track had a gradient of one in 16.

The importance of Queenstown's rail link with Burnie depended on the fact that there was no road link with Hobart before 1932. Traffic slowly declined on the Zeehan-Strahan line and the Government decided to close it in 1960. In 1963, the Mt. Lyell Company ceased working the Queenstown-Strahan line, road transport to the port being a more economic proposition. The last private railway in the State—the Emu Bay—still operates between Burnie and Rosebery, and its main activity is concerned with the haulage of concentrates from the Electrolytic Zinc Company's mines. The recent opening of the Murchison Highway linking west and north-west coasts has robbed the Emu Bay line of one frequent type of freight—motor vehicles (motorists plus their vehicles had to travel by train).

An oddity of railway construction on the West Coast at the turn of the century was the attempt by two companies simultaneously to construct lines to Macquarie Harbour. The Mt. Lyell Mining and Railway Company's line to Strahan has already been described; its competitor, the North Mt. Lyell Mining Company, completed a line to the harbour a year later at Pillinger but was then absorbed by the Mt. Lyell Company, thus ending the absurdity of two tracks serving the same general area.

Recent Developments

The long-term problem of the State railways has been to reduce the annual operational loss and, in this connection, three major trends have become apparent in recent years:

Introduction of Diesel Locomotives

The elimination of steam locomotives from the system has been almost completed; in 1963-64, for example, steam locomotive engine miles were less than 0.8 per cent of total engine miles. Three types of diesel are in operation: mechanical, hydraulic and electric but the bulk of running falls on the diesel electric locomotives. At 30th June, 1964, the system had in service the following locomotives: Steam 19, Diesel Mechanical 18, Diesel Hydraulic two, Diesel Electric 35, total 74. In addition, services were maintained using 16 self-contained railcars.

Reduction in Passenger Services

The peak of the system's effectiveness in carrying passengers was reached in 1945-46 when 3.4 million passenger journeys were made. Of recent years, a deliberate policy of eliminating uneconomic services has been pursued and passenger journeys in 1963-64 had fallen to 1.4 million.

Rail Ferry Service

This new service is somewhat ambiguously titled since, in other parts of the world, there are railway ferries actually moving rolling stock across water barriers. In the Tasmanian situation, there are roll-on roll-off ferries and container vessels, but there is no means of transferring rolling stock to the continental railways; in any case, the different gauges (three foot six inch as against four foot 8½ inch) present a major difficulty. The introduction of roll-on roll-off ferries and container vessels to the Bass Strait trade, commencing in 1959, was nevertheless accepted by the State railways as an opportunity to extend their existing freight services; the new facility was named "rail ferry service".

In essence, the rail ferry service aims at giving door to door transport between Tasmania and the continental States. At the Tasmanian end, transport to and from the sea terminals is handled by the railways and by local carriers commissioned by the railways. At the Victorian sea terminals, carriage is arranged through a road transport agency which acts in co-operation with the Tasmanian railways.

The service began with the evolution of the "railroader" container, a cargo-carrying unit which is adaptable to the carriage of almost any type of freight. The sides and ends of the "railroader" are removable for the carriage of long articles (e.g. packed timber), or for the nesting of the pallet-like trays, to enable their movement in parcels of up to six within the space of a single unit. Because these containers are of open design, the charges for cargo are based on actual cargo measurement only and the consignor is therefore not responsible for the cost of lost space, as would be the case with an enclosed type of container. Frozen meat, confectionery, and apples direct from cool store are insulated with blanket-type telescopic covers under the tarpaulins to prevent heat penetration. Carriage to Sydney and even Brisbane has been very satisfactory under such conditions. In addition to the general purpose "railroader", specialised types of container have been evolved, e.g. for livestock, bulk malt, refrigeration, &c.

Considerable ingenuity has gone into the design of the rail ferry service containers which need fittings to allow handling by fork-lift truck, railway gantry and ship's crane, as well as anchorages for securing to rolling stock on

both Tasmanian and continental railways. The containers on a typical rail ferry service journey may cross Bass Strait in any of three ways: (1) on a road trailer; (2) on the upper deck of a combined trailer-container ship; (3) in the holds of converted container ships. The chief ports through which the service operates are Burnie, Bell Bay and Devonport.

The rail ferry service is now the largest single operator between Melbourne and northern Tasmanian ports and provides an interesting example of co-operation between State and private enterprise.

Operating Statistics

The next table shows the principal operating statistics for the Tasmanian system:

**Tasmanian Government Railways
Operating Statistics**

Year	Route-Mileage Open (a) (Miles)	Revenue Train-Mileage (^{'000} Miles)	Passenger- Journeys (^{'000})	Goods and Livestock Carried (^{'000} Tons)
1954-55 ..	605	2,066	3,114	1,041
1955-56 ..	585	2,105	2,977	1,075
1956-57 ..	579	1,855	2,813	1,061
1957-58 ..	565	1,568	2,444	1,096
1958-59 ..	567	1,539	2,344	1,138
1959-60 ..	538	1,550	2,292	1,191
1960-61 ..	517	1,516	2,103	1,192
1961-62 ..	516	1,415	1,816	1,096
1962-63 ..	516	1,322	1,558	1,165
1963-64 ..	500	1,322	1,426	1,155
1964-65 ..	500	1,272	1,340	1,091

(a) At end of period.

Financial Operations

The following table gives details of gross earnings and working expenses:

**Tasmanian Government Railways
Financial Operations**

Year	Gross Earnings		Working Expenses (a)		Net Earnings (b)	
	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile	Total	Per Revenue Train Mile
	\$ ^{'000}	\$	\$ ^{'000}	\$	\$ ^{'000}	\$
1954-55 ..	4,644	2.25	6,154	2.98	— 1,510	— 0.73
1955-56 ..	5,070	2.41	6,524	3.10	— 1,454	— 0.69
1956-57 ..	5,068	2.73	6,894	3.72	— 1,826	— 0.99
1957-58 ..	5,138	3.28	6,436	4.10	— 1,298	— 0.82
1958-59 ..	5,414	3.52	6,430	4.18	— 1,016	— 0.66
1959-60 ..	5,616	3.62	6,726	4.34	— 1,110	— 0.72
1960-61 ..	5,464	3.60	7,090	4.68	— 1,626	— 1.08
1961-62 ..	5,406	3.82	6,878	4.86	— 1,472	— 1.04
1962-63 ..	5,598	4.23	6,670	5.04	— 1,072	— 0.81
1963-64 ..	5,668	4.29	6,940	5.24	— 1,272	— 0.95
1964-65 ..	5,581	4.38	7,233	5.68	— 1,652	— 1.30

(a) Includes provision for depreciation but excludes interest.

(b) Excess of gross earnings over working expenses.

Employment and Wages

In the table that follows, details are given of the number of employees, and of wages and salaries paid over a ten-year period:

Tasmanian Government Railways Number of Employees and Wages and Salaries Paid

Year	Average Number of Employees (a)		Salaries and Wages Paid (\$'000)	Year	Average Number of Employees (a)		Salaries and Wages Paid (\$'000)
	Salaried	On Wages			Salaried	On Wages	
1954-55	355	2,294	4,570	1959-60	366	2,028	4,932
1955-56	375	2,251	4,790	1960-61	367	2,052	5,136
1956-57	359	2,316	5,030	1961-62	354	1,994	4,990
1957-58	353	2,081	4,612	1962-63	357	1,891	4,868
1958-59	351	2,066	4,660	1963-64	366	1,895	5,220

(a) Excludes construction staff.

Comparison with Other Australian Systems

The Tasmanian system of Government railways is the smallest in Australia and the following table, showing principal operational details, allows a comparison to be made:

Australia—Government Railway Systems, 1963-64 Operating Statistics

System	Average Route Mileage (Miles)	Revenue Train-Mileage ('000 Miles)	Passenger-Journeys ('000)	Goods and Live-stock Carried ('000 Tons)
N.S.W.	6,055	39,078	240,677	25,814
Victoria	4,242	20,113	153,396	12,132
Queensland (a)	6,058	19,161	25,903	9,796
S.A.	2,514	6,666	15,227	5,179
W.A.	3,677	7,506	10,814	5,187
Tasmania	504	1,322	1,426	1,155
Commonwealth	2,252	2,668	338	2,478
Total Australia ..	25,302	96,514	447,781	61,741

(a) Includes Queensland portion of Uniform Gauge Railway.

Financial Comparison

In comparing the financial results of the Tasmanian system with those of other authorities, certain difficulties arise from the treatment of depreciation. In the table that follows, working expenses for the systems in Tasmania, S.A. and W.A. include provision of reserves for depreciation. A further complication arises from the fact that interest is not charged against the railways accounts in the Victorian and Commonwealth systems.

To the extent that there is differing treatment of interest and of depreciation provisions in the various systems, the "net profit or loss" shown in the next table is not a good basis for making comparisons; however, if due allowance is made for interest charges in the case of the Victorian and the Commonwealth systems, it will be seen that loss, rather than profit, is characteristic of most Australian systems.

Australia—Government Railways, 1963-64
Financial Operations
 (\$ million) (a)

System	Gross Earnings (b)	Working Expenses (c)	Net Earnings	Interest (Including Exchange) on Loan Expenditure	Net Profit or Loss
N.S.W.	202.5	177.4	25.1	22.6	2.5
Victoria	92.8	91.5	1.3	(d)	1.3
Queensland	84.3	78.3	6.0	9.6	— 3.7
S.A.	29.5	30.9	— 1.4	4.8	— 6.2
W.A.	34.6	35.8	— 1.2	5.6	— 6.8
Tasmania	5.7	6.9	— 1.3	0.9	— 2.2
Commonwealth	15.2	14.3	0.9	(d)	0.9
Total Australia	464.5	435.1	29.3	43.5	— 14.1

(a) Figures have been rounded to nearest \$100,000 without adjustment to add to totals.

(b) Excludes Government grants, e.g. N.S.W., \$3,200,000; S.A., \$8,000,000, &c.

(c) Includes provision for depreciation in S.A., W.A., and Tasmania.

(d) Interest not charged against railway accounts.

GOVERNMENT TRAMWAY, TROLLEY-BUS AND OMNIBUS SERVICES

Scope

The details that follow refer to services provided by the Metropolitan Transport Trust and by the Tasmanian Transport Commission. At 30th June, 1964, the Metropolitan Transport Trust was operating omnibus services in Hobart, Launceston and Burnie; in Hobart and Launceston, it was also operating on some routes with trolley-buses. The Transport Commission was operating omnibuses on long-distance intra-state routes.

Metropolitan Transport Trust

Until 1955, tramway, trolley-bus and omnibus services were operated in Hobart and Launceston by the municipal authority in each city. The Hobart system had operated without subsidy but the Launceston system received, as one item of revenue, the annual proceeds from a special tramways rate.

The *Metropolitan Transport Act 1954* empowered the State to enter into agreements for the acquisition of the two systems and to vest them in the newly constituted semi-government authority named in the Act. After negotiation with the two municipal authorities, the Trust arranged to take over the Hobart system from 28th February, 1955, and the Launceston system from 1st July, 1955. It was part of the agreement that the Trust should re-imburse to the municipal authorities the annual charges relating to the loan debt of each system. Future capital requirements were to be met by advances from the State loan fund.

During 1959-60, the Trust commenced the operation of omnibus services in Burnie. In October, 1960, trams ceased running in Hobart, the system now relying entirely on omnibuses and trolley-buses (the Launceston system had dispensed with trams before it was taken over by the Trust).

Financial Operations of Trust

The following table shows the income and expenditure of the Metropolitan Transport Trust for a five-year period:

Metropolitan Transport Trust
Income and Expenditure
 (\$'000)

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
Income—					
Traffic Operations	1,874	1,967	1,922	1,876	1,855
Other Earnings	24	30	33	29	27
Subsidy—State Government	470	598	720	600	680
Total	2,368	2,595	2,675	2,505	2,562
Expenditure—					
Traffic Operations	1,152	1,236	1,220	1,157	1,221
Maintenance	452	440	412	418	433
Power and Fuel	202	224	212	208	211
Workshop and Stores ..	34	39	71	53	34
Administration and General..	251	299	313	322	306
Debt Charges	204	211	214	186	172
Depreciation Charges ..	83	137	187	193	207
Total	2,378	2,586	2,629	2,537	2,584

Loan Debt of Trust

The loan debt of the Trust is partly in respect of debentures and inscribed stock originally issued by Hobart and Launceston Corporations. At 30th June, 1964, loans of this nature stood at \$305,722 (£152,861); net advances from the State loan fund stood at \$2,782,908 (£1,391,454).

Transport Commission—Omnibus Services

The financial operations of the Transport Commission are described in the section of this chapter headed "Transport Commission"; omnibus services are included in the financial details of this authority under "road transport services".

Operating Statistics

The tables that follow combine the operations of the Metropolitan Transport Trust and of the omnibus services provided by the Transport Commission.

Government Tramway, Trolley-bus and Omnibus Services
Operating Statistics (a)

Particulars	1954-55	1959-60	1960-61	1961-62	1962-63	1963-64
Route-miles (b)—						
Tramway ..	9	5	..	..	..	..
Trolley-bus ..	21	27	27	28	28	28
Omnibus ..	564	785	813	813	808	910
Vehicle-miles—('000)						
Tramway ..	906	592	83	..	..	..
Trolley-bus ..	1,438	1,597	1,550	1,397	1,353	1,340
Omnibus ..	1,738	3,934	4,707	4,946	4,863	5,094
Passenger-journeys(c) (^{'000})	24,927	27,979	26,256	25,576	25,145	24,756

(a) Operation of fleets owned by Metropolitan Transport Trust and Transport Commission.

(b) At end of period.

(c) Passenger-journeys on trams, trolley-buses and omnibuses.

Financial Details

The following table shows the gross revenue (excluding Government grants) and the working expenses associated with the transport systems of the two authorities:

Government Tramway, Trolley-bus and Omnibus Services
Gross Revenue and Working Expenses (a)
(\$'000)

Particulars	1954-55	1959-60	1960-61	1961-62	1962-63	1963-64
Gross Revenue (b) ..	1,632	2,312	2,402	2,356	2,302	2,278
Working Expenses (c)	1,706	2,714	2,832	2,858	2,760	2,824
Net Revenue ..	— 74	— 402	— 430	— 502	— 458	— 546

(a) Operation of fleets owned by Metropolitan Transport Trust and Transport Commission.

(b) Excludes government grants.

(c) Includes depreciation.

Comparison with Other States

The services under the two authorities, when their financial details are combined, obviously run at a loss; the losses are met, in the main, from State Government grants. The necessity for subsidising similar government transport systems in other parts of Australia is suggested by the following table:

Australia—Government and Municipal Tramway, Trolley-bus and Omnibus Services,
1963-64
Net Revenue

State	Total	Per Passenger-Journey	Per Route-Mile	Per Vehicle-Mile
	\$'000	cents	\$	cents
N.S.W.	— 2,882	— 1.10	— 5,126	— 6.49
Victoria	— 370	— 0.19	— 1,330	— 1.44
Queensland ..	— 56	— 0.05	— 154	— 0.39
S.A.	280	0.47	1,900	2.43
W.A.	— 378	— 0.74	— 100	— 2.14
Tasmania	— 546	— 2.20	— 616	— 8.48
Total (a) ..	— 4,202	— 0.60	— 686	— 3.44

(a) Includes Northern Territory and the Australian Capital Territory not specified above.

The previous table dealing with net revenue in all States is not a complete account of the losses since interest has not been taken into the calculation. In 1963-64, interest payments were as follows (in \$'000): N.S.W., 1,472; Victoria, 944; Queensland, 416; S.A., 516; W.A., 382; Tasmania, 156.

ROADS AND BRIDGES IN TASMANIA

Scope

The details in the following section refer to: (i) "classified" roads; (ii) roads of local government authorities; (iii) roads of other government authorities. A further qualification is that the roads are those normally open to traffic.

Definitions and Mileages

(i) *Classified Roads:* These are roads for which the State Government accepts direct responsibility, the construction and maintenance authority being the Public Works Department. The mileage of classified (or State) roads at 30th June, 1965, was as follows: State highways, 1,171 miles; main roads, 662 miles; secondary roads, 196 miles; tourist roads, 46 miles; and other roads, 169 miles; total State roads, 2,244 miles.

(ii) *Roads of Local Government Authorities:* The roads for which the local government authorities accepted responsibility at 30th June, 1965, included: town and city streets, 1,424 miles; other municipal roads, 7,198 miles; total, 8,622 miles.

(iii) *Roads of Other Government Authorities:* The roads for which other government authorities accepted responsibility at 30th June, 1965, included: roads of the Hydro-Electric Commission, 160 miles; Forestry Commission, 1,452 miles; Closer Settlement Board, 60 miles; total, 1,672 miles.

Surface of Roads

The following table shows mileages of all roads normally open to traffic, classified according to road surface, and according to the level of government which accepts responsibility for construction and maintenance. The most striking feature is the increase, over the last ten years, in the percentage of State (or classified) roads with sealed surfaces; as the table indicates, the sealed surface mileage has increased from 37.4 per cent (30th June, 1955) to 63.9 per cent (30th June, 1965).

Length of Roads According to Nature of Surface at 30th June

Type of Surface	1955	1961	1962	1963	1964	1965
CLASSIFIED ROADS						
Sealed (a) (miles)	818	1,090	1,177	1,266	1,336	1,435
Unsealed (b) (miles)	1,370	1,129	1,024	947	874	809
Total.. (miles)	2,188	2,219	2,201	2,213	2,210	2,244
Sealed Ratio (c) (%)	37.4	49.1	53.5	57.2	60.5	63.9
ROADS OF LOCAL GOVERNMENT AUTHORITIES						
Sealed (a) (miles)	(d)	768	848	967	1,072	1,184
Unsealed (b) (miles)	(d)	6,170	6,126	6,086	6,168	6,124
Formed or Cleared Only (miles)	(d)	1,432	1,495	1,488	1,342	1,314
Total.. (miles)	(d)	8,370	8,469	8,541	8,582	8,622
Sealed Ratio (c) (%)	(d)	11.1	12.2	13.7	14.8	16.2
ROADS OF OTHER GOVERNMENT AUTHORITIES						
Sealed (a) (miles)	(d)	22	27	27	27	47
Unsealed (b) (miles)	(d)	1,104	1,196	1,259	1,442	1,625
Total.. (miles)	(d)	1,126	1,223	1,286	1,469	1,672
Sealed Ratio (c) (%)	(d)	2.0	2.2	2.1	1.8	2.8

Length of Roads According to Nature of Surface at 30th June—*continued*

Type of Surface	1955	1961	1962	1963	1964	1965
ALL ROADS						
Sealed (a) (miles)	(d)	1,880	2,052	2,260	2,435	2,666
Unsealed (b) (miles)	(d)	8,403	8,346	8,292	8,484	8,558
Formed or Cleared Only (miles)	(d)	1,432	1,495	1,488	1,342	1,314
Total.. (miles)	(d)	11,715	11,893	12,040	12,261	12,538
Sealed Ratio (c) (%)	(d)	18.3	19.7	21.4	22.4	23.8

(a) Bitumen or concrete.

(b) Gravel or stone.

(c) Sealed as a proportion of sealed and unsealed (excluding formed and cleared only).

(d) Not available on comparable basis.

Classified (or State) Roads

The next table analyses the mileage of classified roads according to their description, and also according to their surface. The principal State highways include the following: (i) *Arthur* (46 miles), from Sorell to Port Arthur; (ii) *Bass* (177 miles), from Launceston to Marrawah in the north-west; (iii) *Channel* (59 miles), from Hobart to Huonville, via D'Entrecasteaux area; (iv) *East Tamar* (27 miles), from Launceston to Bell Bay; (v) *Huon* (59 miles), from Hobart to Hythe via Dover; (vi) *Lake* (93 miles), from Deloraine via Great Lake to Melton Mowbray; (vii) *Lyell* (171 miles), from Granton, near Hobart, to Strahan; (viii) *Marlborough* (20 miles), from Bronte to Lake Highway near Miena; (ix) *Midland* (114 miles), from Glenorchy to Launceston; (x) *Murchison* (48 miles), from Zeehan highway to Waratah area; (xi) *Tasman* (263 miles), from Hobart to Launceston, via East Coast and St. Helens; (xii) *Waratah* (44 miles), from Somerset to Waratah area; (xiii) *West Tamar* (28 miles), from Launceston to Inspection Head.

Classified (or State) Roads
Description and Length at 30th June, 1965
(Miles)

Description	Nature of Surface		Total
	Sealed (a)	Unsealed (b)	
Highways	873.33	298.14	1,171.47
Main Roads	436.48	225.26	661.74
Secondary Roads	77.12	118.58	195.70
Tourist Roads	3.74	42.01	45.75
Subsidised Roads	10.33	122.70	133.03
Developmental Roads	34.44	1.50	35.94
Total	1,435.44	808.19	2,243.63

(a) Bitumen or concrete.

(b) Gravel or stone.

Expenditure on Roads

As indicated in the preface to this section, the responsibility for road construction and maintenance is placed upon the State Government, and upon local government and semi-government authorities. The financial details which follow relate only to funds available to the State Government.

The following table shows, for a five-year period, details of the main source of funds available to the State Government for road construction and maintenance:

Principal Funds Available to State Government for Roads
(\$'000)

Particulars	1960-61	1961-62	1962-63	1963-64	1964-65
Motor Vehicle Registration, Taxation, Licences, Fines, &c.	2,326	2,509	2,833	3,019	3,153
Commonwealth Aid Roads Grants	4,600	5,000	5,400	5,800	6,500
State Loan Fund	4,923	4,125	3,854	3,165	3,468

Receipts and Expenditure, 1964-65

The next table gives a detailed analysis of funds available to the State Government during 1964-65, and their expenditure:

State Road Funds (Combined Funds), 1964-65

Particulars	\$
Receipts—	
State—	
Motor Vehicle Registration, Taxation, Licences, Renewal Fees, Fines, &c.	3,152,984
Consolidated Revenue, n.e.i.	23,992
Loan Fund	3,467,914
Commonwealth—	
Commonwealth Aid Roads Act Grants	6,500,000
Special Works (a)	1,085,500
Special Grants	14,946
Local Government—	
Repayment of Advances	16,114
Miscellaneous—	
Sale of Plant	61,588
Sale of Materials	1,790
Other	97,882
Total	14,422,710
Expenditure—	
Construction and Reconstruction, Roads and Bridges	11,419,650
Maintenance, Roads and Bridges	2,552,440
Purchase of Road Construction Plant and Similar Assets	604,088
Hire and Maintenance of Road Plant (Net)	— 531,692
Purchase of Materials	— 9,096
Other Works connected with Commonwealth Aid Roads Act	76,284
Grants in Aid to Local Government Authorities	15,144
Other Expenditure	383,188
Total	14,510,006

(a) Gordon River Road.

Receipts and Expenditure, Local Government Authorities

Some of the expenditure appearing in the previous table consists of grants from the State Government to local government authorities, although such grants are not specifically dissected. In Chapter 4, "Local Government",

details will be found of: (i) grants from the State to local government authorities for road purposes; (ii) road rates collected by local government authorities; (iii) expenditure on road construction and maintenance by local government authorities from revenue, and from loan funds.

Bridging the Derwent

Introduction

From Hobart, on the west bank of the Derwent, the open sea lies only twelve miles to the south and the estuary near the city is both wide and deep. It was not surprising, therefore, that the eastern shore opposite Hobart was very thinly settled before the construction of a unique floating bridge in 1943. Prior to this date, the dwellers in the eastern suburbs relied upon vehicular and passenger ferry services for travel to and from the city. (The Derwent had been bridged well upstream at Bridgewater in the convict era, but use of this route to the city involved a journey of about thirty miles, some of it over very poor roads.)

The Hobart Bridge

In 1943, the eastern suburbs were linked directly to Hobart by a floating arch bridge with a lift span near the western shore; the centre of the curved floating structure lay upstream from the line between the shore approaches. The western approach to the bridge was only a little over a mile from the heart of the city while the eastern approach lay between the two suburbs of Bellerive and Lindisfarne. The arch of the bridge floated in the horizontal plane, the essence of the structure being 24 curved concrete pontoons connected end to end to form a rigid entity; since the estuary is tidal beyond the bridge site, provision existed at the eastern and western attachments for the whole floating volume to rise or fall vertically. Although the bridge lay above the main port of Hobart, the lift span had to provide for the passage of cargo-vessels going upstream to the Electrolytic Zinc Company's plant at Risdon and for barge traffic bringing newsprint from the A.N.M. plant at Boyer. In the post-war period, major oil storage facilities were built upstream from the bridge and the lift span accommodated the passage of tankers. The bridge was designed by a Tasmanian, Mr. A. W. Knight, later to become Commissioner of the State Hydro-Electric Commission.

The installation of the floating arch bridge, spanning about 3,300 feet of water, led to very rapid development of the eastern suburbs and, by 1955, it became obvious that road traffic was becoming congested. Although the pontoon highway could support three lanes of traffic, the bridge was constricted at the lift span to two lanes. Quite apart from the increasing volume of traffic, some doubt existed as to the possible life of the bridge because of damage inflicted in fierce storms in December, 1943 and November, 1953. The opinion of consulting engineers was obtained in 1956, the object being to replace the floating arch bridge with a structure which would allow unhindered navigation of the river and relieve road traffic congestion.

As early as 1952, a plan had been considered for a straight low-level viaduct bridge supported on piers; this structure would have replaced the floating arch but the original lift span was to remain part of the carriageway. Among later possible designs, the suspension type was rejected on the score of high capital and maintenance costs. The design finally adopted came from G. Maunsell and Partners of London and, in recommending a high level viaduct bridge, the consulting engineers could promise a clear passage at all times for both shipping and road traffic.

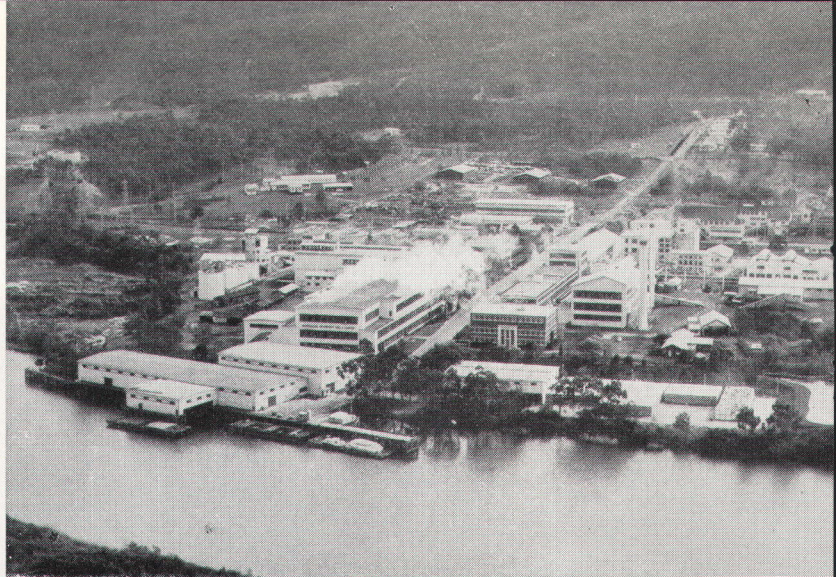


*An apple orchard in blossom.
(Tourist Bureau)*

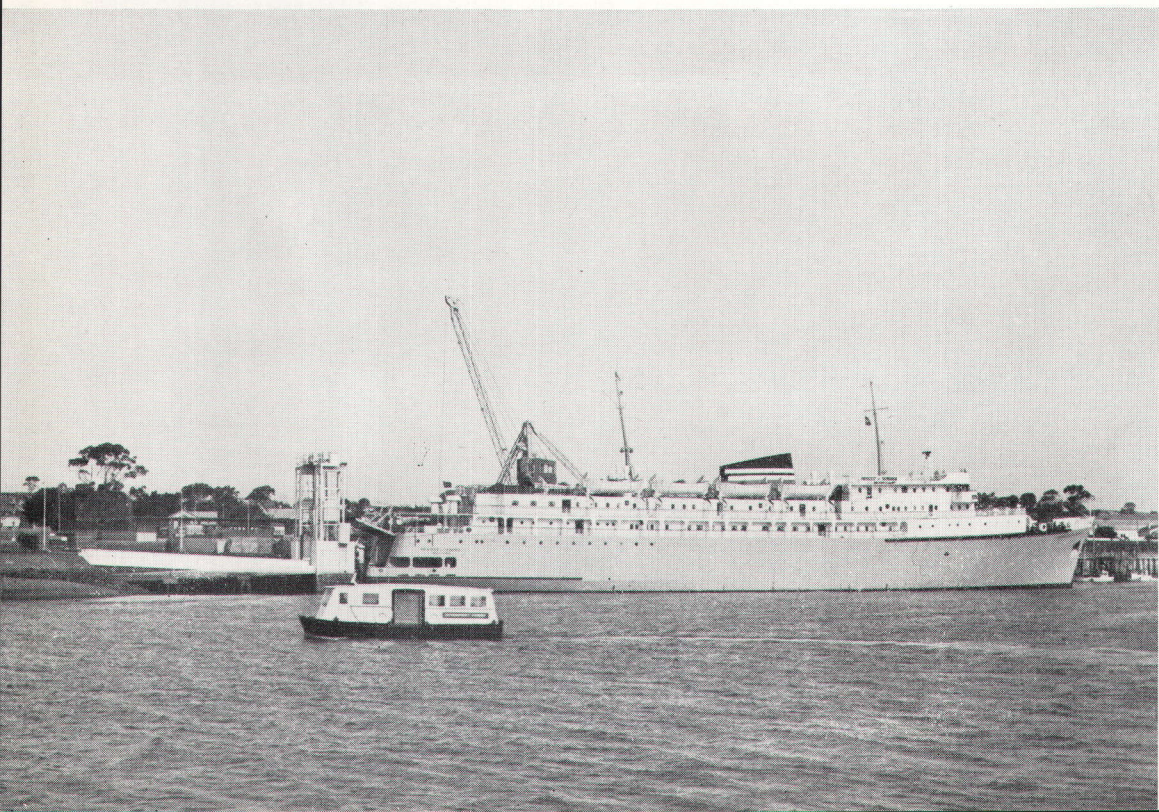


*Fine paper
mill of
Associated
Pulp and
Paper Mills
Ltd. at
Burnie. (Dept.
of Industrial
Development)*

*Newsprint
plant of Aust-
ralian News-
print Mills
Ltd. at Boyer
on the
Derwent.
(Dept. of
Industrial
Development)*



*Vehicular ferry "Princes of Tasmania" at berth in Devonport.
(Dept of Film Production)*



The Tasman Bridge

On 17th August, 1964, traffic began flowing over the new pre-stressed concrete Tasman Bridge, built downstream from the floating bridge; the departure points on either bank for the two bridges were little more than 50 yards apart. On the following two days, the floating bridge weighing 24,000 tons, was disconnected in the centre and towed upstream in two sections to an anchorage on the eastern shore.

The new high-level bridge has four 11 foot traffic lanes and is designed to cope with a peak capacity of 4,000 vehicles per hour, i.e. about double the capacity of its predecessor. Two four foot footpaths provide for pedestrian traffic. The previous bridge had been bounded on both ends by traffic roundabouts. To obtain maximum results from the capacity of the new bridge, each end terminates in three-level interchanges providing complete separation of the different streams of traffic; on the western end, the interchange is an integral part of the main bridge, on the eastern end, a separate structure.

The Tasman Bridge is built on piles and slopes upward from eastern and western approaches to reach its maximum height in the fixed navigation span which gives a minimum clearance of 150 feet to shipping passing underneath. (The corresponding clearance of Sydney Harbour Bridge is 172 feet six inches.) Although the length of the navigation span is 310 feet, the clear waterway underneath is only 240 feet since the two main piers supporting the span are protected by massive fenders. The navigation span is not in the centre of the waterway, being positioned closer to the eastern shore.

The dimensions of the bridge, between the shore abutments, are as follows:

From the Western Shore		feet
Abutment to Pier 13	13 spans of 140 feet each	1,820
Piers 13, 14	1 anchor span	197
Piers 14, 15	1 navigation span	310
Piers 15, 16	1 anchor span	197
Pier 16 to Abutment	6 spans of 140 feet each	840
Total		3,364

By way of contrast, the single span of Sydney Harbour Bridge, between shore abutments, is 1,650 feet.

The eastern approach to the shore abutment is by a short viaduct of twelve 70 foot spans (840 feet); the western approach is by grade separation viaducts approximately 400 feet long. The interchanges on both banks are primarily concerned with the distribution of traffic flowing north or south, to or from the crossing.

Transition from "Old" to "New"

An interesting feature of the change-over from the old to the new bridge was the need to delay the construction of the western second pier to the very last moment. This was essential because the natural approach for a cargo vessel to the old upstream lift span was between piers one and three of the new structure; a large vessel could have passed through the new bridge's completed navigation span but would have had no hope of negotiating the confined waters between the two bridges or of approaching the lift span on the correct bearing. Once work began on pier two, all upstream navigation by vessels of any size had to be halted and could not be resumed until the floating bridge was removed; on the other hand, the floating bridge could not be removed until a carriage-way had been created between piers one and three of the new bridge.

Pier two therefore had to be constructed with great speed and three weeks were allowed for pile-driving, the upper Derwent being temporarily barred to navigation. As soon as the piles were driven, temporary steel framework stagings were floated into position, closing the gaps between piers one and two and piers two and three. Over this framework, a temporary two-lane carriage-way was erected and the diversion of road traffic to the new bridge allowed the removal of the old bridge and the resumption of upstream navigation. Pier two at this stage merely consisted of pile tops as a base for the temporary steel staging, and the next task was capping the piles, erecting support columns and installing the longitudinal beams for the permanent carriage-way. The temporary carriage-way was positioned on the upstream half and permanent construction commenced on the downstream half; the final stage consisted of shifting traffic to the two permanent downstream lanes and completing the permanent upstream carriage-way, thus providing a four-lane flow.

Construction Details

Foundations: The nature of the river bed explains, in part, the original choice of a floating arch pontoon design for the earlier bridging of the Derwent in 1943. The underlying rock formation suitable for foundations was either basalt or dolerite, according to location, but it was covered with massive deposits of silt, sand, conglomerate and clay; the establishment of foundations therefore presented a formidable problem which the design of the earlier bridge ingeniously avoided. The design of the new high-level bridge called for the establishment of piers just above water level, the erection of columns on the piers and the spanning of the columns to form the carriage-way. Conditions at selected piers are as follows:

Piers 4 to 8: The dolerite is as much as 300 feet below water surface with an overlay of stiff clays, coarse gravel, sandy loam and conglomerate.

Pier 18: The water reaches its greatest depth—123 feet.

Under these conditions, the Tasman Bridge, rising more than 150 feet above the sea, resembles an iceberg with much more hidden below the water than appears above it.

In the piling programme, it was planned to base each ordinary pier on eight piles, the main navigation channel piers on 24 and the anchor span piers on 12. To afford greater resistance to horizontal forces, the majority of the piles were to have a one in 12 rake (i.e. to be slanted nearly 5° from the vertical). The programme went according to plan at most piers, the piles generally extending to the underlying basalt or dolerite. At piers four and five, however, the piles are founded in very stiff clays approximately 200 feet below water surface and at piers six, seven and eight they are founded in either a stiff sandy loam or conglomerate, at depths from approximately 180 feet to a maximum depth of 263 feet. On pier seven, a pile of 267 feet is the longest in the whole structure. Where initial tests of load bearing capacity were unsatisfactory (e.g. at piers four and five), the number of piles was increased from eight to 12; successive loadings were applied to consolidate the clay at the toe of the piles and to reduce settlement to an acceptable limit.

Pile Formation: Each pile was formed within a 54 inch diameter tube of three-eighths inch mild steel plate. The tube was sunk to founding level by the combination of grabbing spoil from within the tube and twisting the tube itself by means of a hydraulically-operated oscillator gripping the outside of the casing. Due to the great depths of pile, the tube was not de-watered as otherwise it would be crushed by the external water pressure. The steel tube was left in place but not considered part of the pile for design purposes. Once

the pile had been taken to a suitable foundation, the bottom was cleaned by an airlift and then plugged with concrete. A re-inforcing cage and two grout pipes were placed in the pile for its full length. Stone was then placed in the tube and the voids were grouted by the Colcrete process; placing concrete under water was not practicable in the great depths of water encountered. The grout tubes were withdrawn in stages as the grout level rose within the pile; since the specific gravity of grout is 2.6, the sea water was displaced from the tube by the rising level of grout.

The 54 inch tube was supplied in 30 foot sections which were spliced by welding as the tube sunk into the river bed. The cutting edge at the bottom of the tube was made of thicker plate, to avoid damage and squeezing-in of the tube. When founding on rock, a four-ton star chisel was used to cut into the surface of the rock and so key the toe of the pile.

A floating template positioned and held the piles at the correct rake and braced the group together until the first layer of the pilecap concrete was completed. By arranging the buoyancy tanks of the template pontoon to be below water level, and by tying the pontoon down to large anchor blocks on the river bed, any inconvenience from the tidal rise and fall was avoided. The pile casing was held at the top by the oscillator frame and, below the template pontoon, by guides held between structural steel towers extending 40 feet below deck level.

Pile caps were formed above all but the highest tides to minimise interference from the tide. They were of heavily re-inforced concrete construction formed in three pours. The deck of the template pontoon formed the supporting mould for the first layer of the pilecap. Once this first pour of concrete had strengthened, the template was lowered and withdrawn by opening special gates that enclosed each of the piles. Pre-cast concrete skirting units were then fitted to extend below lowest low water and to mask the top of the piles exposed at low tide; they provide additional fendering in the case of a ship colliding with any pier.

The two main piers on either side of the main navigation span are protected by massive gravity fenders. These fenders comprise a complete concrete ring suspended around each pilecap on flexible links at each corner. The impact of a ship striking these fenders causes them to swing and be lifted on their supports. These gravity fenders have been designed to absorb a glancing blow from a ship of 20,000 tons travelling at nine knots; the complete fender for each pier on the navigation span weighs 1,680 tons.

Superstructure: Above the piers rise columns supporting the bridge deck of six longitudinal beams, the distance between shore abutments being 3,364 feet broken into 22 spans (i.e. requiring 21 piers). With regard to longitudinal stability, the bridge is virtually in three segments. The eastern and western parts gain their longitudinal stability from ties to their respective shore abutments, all expansion and contraction being accommodated in expansion joints at the outer ends of the anchor spans. Thus the remaining part—the navigation and anchor spans—is isolated from the abutments and is therefore supported on rigid columns. Except for the rigid columns under the navigation and anchor spans, the remaining columns are designed to be flexible and accommodate movements of the bridge deck due to the shrinkage and creep of the concrete and variations in temperature and humidity.

A further expansion joint is provided in the navigation span, construction being of the "comb" type in spheroidal graphite cast iron, set flush with the road surface. Thus allowance is made for contraction and expansion at three separate points, the maximum designed movement at these expansion joints being 16 inches.

Cost

In the report of the Auditor General for 1965-66, the aggregate cost to 30th June, 1966 was stated as \$m14.4.

Construction Time

From the pouring of the first concrete to the first passage of traffic over the temporary two lane carriage-way centred on pier two, the period was four years and two weeks.

MOTOR VEHICLE REGISTRATIONS**General**

Statistics in this section deal with: (i) motor vehicles "on the register" at specific dates; (ii) new motor vehicles registered within a specified period, e.g. a year.

Definitions

Register: To be allowed on the public roads, motor vehicles, except those owned by the Commonwealth Government, are required to be registered with the State Transport Commission; State Government vehicles, as well as privately-owned vehicles, are registered with this authority. Commonwealth Government-owned vehicles, except those belonging to the Defence Services, are recorded on a separate Commonwealth register. "On the register", in this section, refers to both the State and Commonwealth registration records, and to all motor vehicles except those of the Defence Services. Statistics of new motor vehicle registrations comply with the same definition.

Vehicles Included: The statistics cover cars, station wagons, motor cycles and commercial vehicles. Commercial vehicles as defined include utilities, panel vans, trucks and omnibuses. Tractors, trailers, and mobile plant and equipment are excluded.

Vehicles on Register

The following table has been compiled to show, in summary form, the increase in motor vehicles on the register since 1910. To give a convenient measure of this growth, vehicles on the register have been related to the population (vehicles per 1,000 persons), and increases have also been expressed as annual averages for each decade.

Motor Vehicles on Register from 1910

At 30th June	Cars and Station Wagons	Com- mercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Average Annual Increase (b)
1910	210	(a)	223	433	2	..
1920	2,404	(a)	1,699	4,103	20	367
1930	12,533	2,198	4,814	19,545	89	1,544
1940	17,598	5,235	3,351	26,184	109	664
1950	25,291	12,928	4,941	43,160	156	1,698
1960	63,748	26,352	3,098	93,198	271	5,004
1965	91,529	29,451	1,527	122,507	335	(c) 5,862

(a) Included with cars and station wagons.

(b) For decade ending in year shown.

(c) For five years ended 30th June, 1965.

The next table gives details of motor vehicles on the register from 1960 and annual increases are shown to allow comparison with the average annual rates for each decade appearing in the previous historical table.

Motor Vehicles on Register

At 31st December	Cars and Station Wagons	Com- mercial Vehicles	Motor Cycles	All Vehicles		
				Total	Per 1,000 of Population	Annual Increase
1960	66,140	26,667	2,763	95,570	268	4,551
1961	70,350	27,177	2,537	100,064	275	4,494
1962	75,697	27,275	2,101	105,073	284	5,009
1963	81,642	28,125	1,856	111,623	299	6,550
1964	88,084	29,005	1,586	118,675	316	7,052
1965	94,039	29,823	1,441	125,303	331	6,628

Motor Vehicles on Register in Australia

Whilst different concepts of what constitutes a "motor vehicle on register" at a particular point in time may be appropriate for different purposes, to obtain uniform statistics for all States and Territories it is necessary to adopt a common definition of Motor Vehicles on Register at a particular date. In the table that follows, the concept of Motor Vehicles on Register at a particular date, say 30th June, is as follows:

- (i) vehicles with fees paid up for any period including 30th June;
- (ii) vehicles for which fees were retrospectively paid for any period including 30th June.

This concept excludes vehicles for which payments were not subsequently made in respect of a period including 30th June, even though at that date their registrations may not have been formally terminated.

The table that follows shows details of motor vehicles on the register for all States and Territories at 30th June, 1965:

Australia—Motor Vehicles on Register, 30th June, 1965 (a)

State or Territory	Cars and Station Wagons	Commercial Vehicles	Motor Cycles	All Vehicles	
				Total	Per 1,000 of Population
	'000	'000	'000	'000	No.
N.S.W.	1,005	289	18	1,313	313
Victoria	818	219	13	1,050	327
Queensland	372	153	12	537	334
S.A.	285	85	13	383	363
W.A.	203	79	9	291	362
Tasmania	92	29	2	123	335
N.T.	8	6	(b)	14	404
A.C.T.	27	5	(b)	32	363
Total	2,810	865	68	3,743	329

(a) Figures rounded to nearest 1,000 without adjustment to add to totals.

(b) Under 500.

Registration of New Motor Vehicles

In the next table, details are shown of new motor vehicles registered over a five-year period:

Annual Registrations of New Motor Vehicles

Particulars	1961	1962	1963	1964	1965
Cars	4,574	6,837	7,470	7,919	8,507
Station Wagons	1,208	1,934	2,012	2,204	1,936
Utilities	830	983	1,103	1,191	1,170
Panel Vans	320	367	372	382	424
Trucks	472	544	717	787	864
Motor Cycles	69	49	62	45	122
Other (a)	60	50	79	66	106
Total	7,533	10,764	11,815	12,594	13,129

(a) Includes omnibuses, ambulances and hearses.

New Registrations According to Make

The table that follows analyses registrations of new cars and new station wagons during the twelve months ended 31st December, 1965, according to the make, and illustrates the present popularity of Holden, Ford, Morris and Chrysler.

Registrations of New Cars and New Station Wagons, 1965

Classified to Predominant Make

Make	Cars		Station Wagons	
	Number	Proportion of Total Cars (Per Cent)	Number	Proportion of Total Station Wagons (Per Cent)
Austin	72	0.8	4	0.2
Chrysler	687	8.1	210	10.8
Datsun	154	1.8	38	2.0
Dodge	17	0.2	..	..
Fiat	97	1.1	1	0.1
Ford	1,427	16.8	318	16.4
Hillman	181	2.1	21	1.1
Holden	2,737	32.2	1,162	60.0
Humber	106	1.2	..	..
Isuzu	172	2.0	..	..
Land Rover .. .. .	..	..	6	0.3
Mazda	24	0.3	24	1.2
Mercedes Benz	31	0.4	..	..
Morris	1,223	14.4	1	0.1
Nissan	25	0.3	8	0.4
Peugeot	50	0.6	7	0.4
Toyota	340	4.0	58	3.0
Triumph	54	0.6	..	..
Vauxhall	332	3.9	2	0.1
Volkswagen	515	6.1	56	2.9
Wolseley	68	0.8	..	..
Other	195	2.3	20	1.0
Total	8,507	100.0	1,936	100.0

"Scrapping" of Motor Vehicles

Apart from the few "veteran" cars owned by enthusiasts, most vehicles are eventually scrapped. No information is collected on the number scrapped each year but the following table contains information from which some inferences may be drawn:

New Motor Vehicles Registered and Annual Increase in Motor Vehicles on Register

Particulars	1961	1962	1963	1964	1965
New Motor Vehicles Registered (a)	7,533	10,764	11,815	12,594	13,129
Annual Increase, Motor Vehicles on Register (b)	4,494	5,009	6,550	7,052	6,628

(a) During year ended 31st December.

(b) Annual increase measured at 31st December.

In comparing the two sets of figures in the previous table, it would be wrong to assume that the difference in each year represented purely scrapped vehicles; exceptions would include vehicles transferred interstate and vehicles "on blocks"—the fact that an owner has let a registration expire does not necessarily mean that he intends to scrap his vehicle. Subject to these and similar difficulties of interpretation, it would appear that there has been some increase in the annual scrapping of motor vehicles.

ROAD TRAFFIC ACCIDENTS IN TASMANIA**Scope of Statistics**

With the rapid development of road transport, there has come an increase in the number of road traffic accidents; some merely involve damage to vehicles, but others result in injury or death. To evolve meaningful statistics describing these events, it has been found necessary to narrow the field of observation to those road traffic accidents which involve casualties, since some accidents resulting only in vehicle damage are not reported to the police (the drivers might merely exchange names and report to their respective insurance companies). Further, there is the difficulty of fixing, in monetary terms, some valid standard for determining what degree of vehicle damage warrants inclusion of an accident in a long-term statistical series—obviously \$20 or \$50 for repairs in 1950 is not comparable with \$20 or \$50 for repairs in 1966.

For these and other reasons, the statistics in this section are restricted to details of those road traffic accidents which involved casualties and which were recorded by the police.

Source of Data

Details of each road traffic accident reported to the police, or investigated by the police, are recorded on a standard form and copies are made available to the Transport Commission and to the Bureau of Census and Statistics; at the Bureau, monthly statistics are compiled only from those reports describing accidents involving casualties. The Transport Commission employs the reports it receives in connection with road engineering, the location of traffic signs and signals, the pin-pointing of dangerous locations, traffic engineering, and accident prevention in general.

Responsibility for, and Cause of, Accidents

For the purposes of the statistics in this section, the police officer reporting the accident determines, on the basis of the evidence available, the road user or agency responsible, and also the cause of the accident. The fact that civil or criminal courts may later make different decisions on these matters is disregarded in these statistics; nor is any attempt made to distinguish between accidents giving rise to subsequent legal action and those not doing so.

Causes of Accidents

Causes of accidents in Australian States are classified, for statistical purposes, in accordance with a standard list of 76 prime causes (although, in this section, only the most frequent causes will be shown). Contributory causes and conflicting or incomplete evidence make precise classification difficult. No provision is made to record and classify such antecedent causes as fatigue, the influence of intoxicating liquor, discourtesy, impatience or other driving faults (e.g. "intoxication" is listed as a possible prime cause but where evidence of intoxication is inconclusive, the reporting police officer usually shows some more immediately apparent cause).

Summary from 1950-51

The following table summarises the principal statistics of road traffic accidents involving casualties from 1950-51:

Road Traffic Accidents Involving Casualties from 1950-51

Period	Accidents		Persons			
	Number	Per 10,000 Vehicles Registered (a)	Killed		Injured	
			Number	Per 10,000 Vehicles Registered (a)	Number	Per 10,000 Vehicles Registered (a)
1950-51	1,013	220	57	12.4	1,212	263
1951-52	1,027	197	87	16.7	1,215	233
1952-53	1,028	179	56	9.7	1,246	217
1953-54	982	156	67	10.7	1,156	184
1954-55	864	127	57	8.3	1,111	163
1955-56	874	120	72	9.9	1,046	143
1956-57	852	111	65	8.5	1,107	144
1957-58	780	96	70	8.6	1,002	123
1958-59	791	92	68	7.9	990	115
1959-60	743	82	79	8.7	1,004	111
1960-61	844	89	75	7.9	1,157	121
1961-62	872	87	72	7.2	1,207	121
1962-63	919	87	67	6.4	1,354	129
1963-64	1,118	101	80	7.2	1,656	149
1964-65	1,180	99	97	8.2	1,692	142
1965 (b)	1,206	98	93	7.6	1,815	148

(a) Based on average number of motor vehicles on register during period. "Vehicles on register" is defined in earlier section headed "Motor Vehicle Registrations".

(b) Year ended 31st December, 1965.

The immediate inference to be drawn from the above table is that the annual totals of accidents involving casualties, and of persons killed and injured, have increased at a much slower rate than have motor vehicles on the register. In 1950, there were 43,160 motor vehicles on the register at 30th June, the corresponding figure for 1965 being 122,507; in the period covered by the table, the registration figure has almost tripled, whereas accident and casualty totals have not doubled.

Road Traffic Accidents, 1964-65

The tables that follow deal with road traffic accidents in 1964-65.

Location of Accidents

The first table shows the location of accidents in the State, dissected between Hobart, Hobart Suburbs and the remainder of Tasmania:

Road Traffic Accidents and Casualties by Location, 1964-65

Particulars	City of Hobart	Suburbs of Hobart	Remainder of State	Whole State
Accidents Involving Casualties ..	276	247	657	1,180
Persons Killed	20	15	62	97
Persons Injured	371	355	966	1,692

Types of Road Users Killed or Injured

The following table analyses casualties to show the types and sex of road user killed or injured:

Type of Road User Killed or Injured, 1964-65

Type of Road User Involved	Killed			Injured		
	Males	Females	Persons	Males	Females	Persons
Drivers of Motor Vehicles ..	35	2	37	585	87	672
Motor Cyclists ..	2	..	2	41	..	41
Pedal Cyclists ..	..	1	1	48	4	52
Passengers (all types)	10	15	25	340	386	726
Pedestrians ..	23	9	32	125	74	199
Other Classes ..	..	..	..	1	1	2
Total ..	70	27	97	1,140	552	1,692

Responsibility for Road Accidents

Earlier mention was made of a standard list of 76 prime causes of accidents. The table that follows, without specifying cause in terms of this detailed list, shows the agency or type of road user believed responsible for accidents and casualties during 1964-65:

Responsibility for Road Traffic Accidents, 1964-65

Responsibility Attributed to—	Accidents Involving Casualties	Persons Killed	Persons Injured
Drivers of Motor Vehicles ..	814	64	1,267
Riders of Motor Cycles ..	19	..	21
Pedal Cyclists	30	..	31
Pedestrians	186	27	164
Passengers	9	..	15
Motor Vehicle Defects ..	49	1	77
Motor Cycle Defects ..	1	..	1
Pedal Cycle Defects ..	4	..	4
Animals	7	..	12
Road Conditions	37	3	67
Weather	7	1	10
Parties not Involved (a) ..	16	..	23
Other Causes	1	1	..
Total	1,180	97	1,692

(a) e.g. a car collides with another, after swerving to avoid a pedestrian who is not struck.

Cause of Accidents (Drivers of Motor Vehicles Responsible)

It will be seen from the previous table that the responsibility for most road traffic accidents is attributed to drivers of motor vehicles. The next table analyses these particular accidents in terms of the standard list of causes:

Road Traffic Accidents, Drivers of Motor Vehicles Responsible, 1964-65
Classification According to Cause

Principal Causes of Accidents for which Drivers of Motor Vehicles (excluding Motor Cycles) were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Excessive speed having regard to conditions ..	181	26	319
Not keeping to the left	85	9	164
Not giving right of way to other vehicles at intersection	174	9	260
Failing to make right-hand turn at intersection with due care	41	..	57
Intoxicated	34	4	47
Inexperienced, including inexperience with type of vehicle in use at time of accident	16	..	22
Inattentive driving	145	7	219
Reversing without care	7	..	7
Overtaking on near-side or in the face of oncoming vehicle(s) or without enough clearance	34	4	41
Following other vehicle too closely	13	..	23
Infirmary of driver	4	..	5
Driver asleep or drowsy	19	1	28
Dazzled by lights of an approaching vehicle ..	15	1	15
Failing to signal intention of turning or stopping, or giving incorrect signal	4	..	6
Pulling or swinging out from kerb suddenly or without warning	4	..	7
Disregarding, misunderstanding or failing to observe traffic sign or signal of other driver	15	2	19
Crossing railway level crossing without due care ..	3	..	3
Hit-run drivers (n.e.i.)	3	..	3
Other causes	17	1	22
Total	814	64	1,267

Causes of Accidents (Pedestrians Responsible)

The table that follows analyses road traffic accidents for which pedestrians were held responsible, in terms of the standard list of causes (after drivers of motor vehicles, pedestrians were considered responsible for the next most numerous group of accidents):

Road Traffic Accidents, Pedestrians Responsible, 1964-65
Classification According to Cause

Principal Causes of Accidents for which Pedestrians were Responsible	Accidents Involving Casualties	Persons Killed	Persons Injured
Walking across roadway without due care	79	16	66
Running across roadway	28	1	28
Passing behind or in front of moving or stationary vehicle or object	6	1	5
Stepping off kerb without due care	9	3	6
Intoxicated	7	..	8
Children under 7 years of age not under, or breaking away from, the supervision of an elder person ..	51	4	47
Other causes	6	2	4
Total	186	27	164

Days of the Week on Which Accidents Occurred

The following table shows the day of the week on which accidents and casualties occurred:

Road Traffic Accidents, 1964-65
Day of Week of Occurrence

Day of the Week	Accidents Involving Casualties	Persons Killed	Persons Injured
Monday	120	10	174
Tuesday	100	4	129
Wednesday	137	9	178
Thursday	146	15	167
Friday	202	22	288
Saturday	306	21	454
Sunday	169	16	302
Total	1,180	97	1,692

Accidents and Holidays

The behaviour of traffic on the roads can be related to public holidays, and to holiday weekends. The next table analyses accidents in terms of this relationship (and calls attention, by an "annual equivalent" column, to the difference in apparent risk associated with holidays):

Road Traffic Accidents, 1964-65
Accidents in Relation to Holidays

Day of Occurrence	Days in 1964-65	Accidents Involving Casualties	Persons Killed		Persons Injured	
			Number	Annual Equivalent (a)	Number	Annual Equivalent (a)
Public Holidays (not Saturdays or Sundays)	11	44	7	234	64	2,124
Days during Holiday Week-ends (Saturdays and Sundays Only)	12	51	3	91	82	2,493
Days before Holidays (or Holiday Week-ends)	9	29	4	161	44	1,785
Days after Holidays (or Holiday Week-ends)	9	17	3	120	24	975
Other Days	324	1,039	80	91	1,478	1,664
Total	365	1,180	97	97	1,692	1,692

(a) The daily average rate has been assumed to persist for a year.

Age and Responsibility

As shown in a previous table, drivers of motor vehicles (excluding motor cycles) were believed responsible for 814 out of the 1,180 accidents involving casualties which were reported to the police during 1964-65. The following table analyses the age and sex of the drivers responsible for these 814 accidents, and also shows the casualties associated with the accidents.

Road Traffic Accidents, 1964-65
Age and Sex of Drivers of Motor Vehicles Responsible

Age Group of Drivers Responsible (in Years)	Male Driver			Female Driver		
	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)	Accidents Involving Casualties	Persons Killed (a)	Persons Injured (a)
Under 21	204	20	324	12	..	18
21-29	221	13	362	17	1	27
30-39	104	13	146	15	..	23
40-49	92	6	150	10	1	10
50-59	52	7	71	5	..	7
60 and over ..	30	3	44	5	..	8
Not Stated ..	42	..	72	5	..	5
Total ..	745	62	1,169	69	2	98

(a) The age groups relate to the driver, not to those killed or injured.

Age and Sex of Road Users Killed

The next table shows the age and sex of the various types of road user killed in 1964-65:

Road Traffic Accidents, 1964-65
Age and Sex of Road Users Killed

Age Group (in Years)	Type of Road User Killed					All Road Users
	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Passengers (All Types)	Pedestrians	
MALES						
Under 7 .. ..	..	..	..	1	4	5
7-16 .. ..	..	..	..	3	2	5
17-20	10	1	..	2	1	14
21-29	6	1	..	3	..	10
30-39	9	..	..	..	1	10
40-49	3	..	..	..	2	5
50-59	3	..	..	..	4	7
60 and over ..	4	..	..	1	9	14
Not Stated ..	..	..	..	..	..	..
Total ..	35	2	..	10	23	70
FEMALES						
Under 7 .. ..	..	..	..	..	1	1
7-16 .. ..	..	..	..	3	..	3
17-20 .. ..	..	..	..	3	1	4
21-29	1	..	..	..	1	2
30-39 .. ..	..	..	..	1	..	1
40-49	1	..	..	3	..	4
50-59 .. ..	..	..	..	3	1	4
60 and over ..	..	..	1	1	5	7
Not Stated ..	..	..	..	1	..	1
Total ..	2	..	1	15	9	27

MOTOR VEHICLE USAGE IN TASMANIA

Introduction

A special sample survey was conducted throughout Australia by the Bureau of Census and Statistics in November, 1963, for the purpose of gathering statistical information on the usage of motor vehicles. This section deals with estimates for Tasmania produced from the survey.

The survey was conducted by means of a postal questionnaire sent during November, 1963, to owners of a sample of the vehicles currently registered. Two questionnaires were used, one applicable to cars and station wagons, the other to all goods-carrying vehicles, i.e. utilities, panel vans, trucks and truck-type vehicles. Information was sought relating to the type and present use of the vehicle, fuel consumption and mileage.

For the purpose of selecting the sample, the vehicles registered in each State were divided into seven categories as follows: (i) cars and station wagons; (ii) utilities and panel vans; then trucks and truck-type vehicles grouped in carrying capacities as indicated: (iii) of less than two tons; (iv) of two but less than three tons; (v) of three but less than five tons; (vi) of five tons and over, rigid; and (vii) of five tons and over, articulated. The sampling fractions, which differed for each category, were chosen to give approximately the same degree of precision in the estimates of the mileages run by vehicles of each category.

At the time of the survey, a small proportion of the sample vehicles was owned by dealers. No particulars of mileage or other usage could be obtained for such vehicles. It was assumed, however, that this proportion could be used to represent the average proportion of vehicles over the year which are in dealers' ownership and hence not contributing to active mileage.

Whilst it is not possible to make precise comparisons, total fuel consumption estimated from the survey appears to fall short of other estimates made on the evidence of statistics of sales. A tendency to overestimate mileage per gallon, particularly among car owners, is a possible explanation of this deficiency which appears to be of the order of 15 to 20 per cent.

The timing of the collection and the specification of the form were such that the annual mileage rate may be interpreted as representative of usage in the calendar year 1963. The numbers of vehicles to which the data should be related are the average of the monthly numbers on the register for the same calendar year; where "number on register" appears in subsequent tables, this concept has been employed.

Many figures in the tables have been rounded, but averages were calculated from the figures before rounding.

It is realised that information obtained from the survey relates to 1963 and variations in usage will have occurred since that year. It is expected that further surveys will be conducted from time to time to provide more up-to-date information.

Cars and Station Wagons

The following table analyses the usage characteristics of Tasmanian cars and station wagons. These vehicles have been treated separately from all others on the basis that they are not goods-carrying vehicles in the accepted sense.

Survey of Motor Vehicle Usage, 1963
Cars and Station Wagons—Numbers and Characteristics

Particulars	Unit	State Total
All Cars and Station Wagons on Register (a)—		
Number	No.	78,400
Average Annual Mileage per Vehicle	Miles	8,460
Business Mileage, Proportion of all Mileage	Per Cent	31.4
Fuel Consumption	M.P.G.	24.7
Cars and Station Wagons, by Business Mileage (b)—		
With no Business Mileage	Per Cent	70.2
With Business Mileage	Per Cent	29.8
Cars and Station Wagons, by Use for Travel to and from Work (b)—		
Not Used	Per Cent	23.0
Used on Most Working Days	Per Cent	62.4
Used on Occasional Working Days	Per Cent	14.6
Whether Second Car or Station Wagon is Owned (b) (c)—		
Second Car Owned	Per Cent	11.6
No Second Car Owned	Per Cent	76.4
Not Applicable (d)	Per Cent	12.0
Cars and Station Wagons in Metropolitan and Non-Metropolitan Areas (e)—		
Proportion of Total—		
Metropolitan	Per Cent	38.8
Non-Metropolitan	Per Cent	61.2
Average Annual Mileage Per Vehicle—		
Metropolitan	Miles	8,930
Non-Metropolitan	Miles	8,390
Business Mileage, Proportion of all Mileage		
Metropolitan	Per Cent	38.3
Non-Metropolitan	Per Cent	26.8

(a) Includes vehicles in dealers' ownership. (b) Excludes vehicles in dealers' ownership.

(c) By owner or spouse.

(d) Companies, Government Departments, &c.

(e) Classification as metropolitan or non-metropolitan based upon registration address. "Metropolitan" means Hobart and Suburbs.

Goods-Carrying Vehicles

The next table excludes cars and station wagons, and is restricted to goods-carrying vehicles arranged in six categories.

Survey of Motor Vehicle Usage, 1963
Goods Carrying Vehicles (a) by Category—Numbers and Characteristics

Particulars	Utilities and Panel Vans	Trucks with Carrying Capacity—				
		Less than 2 Tons	2 but less than 3 Tons	3 but less than 5 Tons	5 Tons and over, Rigid	5 Tons and over, Articulated
On Register (No.)	17,800	1,250	700	2,400	3,900	650
Average Annual Mileage Per Vehicle (Miles)	7,850	5,510	5,550	6,010	10,870	16,740
Business Mileage—Proportion of Total (Per Cent)	57.1	94.9	95.9	94.9	98.3	99.7
Fuel Consumption (M.P.G.)	21.5	12.2	11.1	9.5	8.3	6.4

(a) Includes vehicles in dealers' ownership.

Goods-Carrying Vehicles with Business Mileage

Definition

The previous table includes vehicles owned by dealers and also vehicles used only privately (e.g. utilities are commonly used for purely private purposes). It would be wrong in principle to further analyse the characteristics of *all* goods-carrying vehicles, because averages compiled on this basis would be affected by the inclusion of vehicles which were not used for any commercial or business purpose, or for which no details of previous usage could be obtained. Accordingly all tables that follow refer to *residual* goods-carrying vehicles, following on the elimination of those reporting nil mileage (e.g. on blocks), those with private mileage only, and those in dealers' ownership.

Analyses (Business Mileage Reported)

The tables that follow are concerned with the characteristics of goods-carrying vehicles with business mileage (either fractional or total). Characteristics such as annual mileage, average load, &c. are analysed in the following manner: (i) by category, i.e. in accordance with the description of the vehicle; (ii) by main area of operation of the vehicle; (iii) by main use of vehicle (for others or in own business); (iv) by type of goods mainly carried; and (v) by main kind of business in which vehicle used. In general, the tables attempt to describe the principal characteristics of goods-carrying vehicles which were used for any industrial, commercial or business purpose.

Analysis by Category: The following table analyses the principal characteristics of goods-carrying vehicles according to category, i.e. in terms of the six classifications of vehicles established for the purpose of the survey:

Analysis by Category, 1963

Utilities and Panel Vans	Trucks with Carrying Capacity—					All Goods- Carrying Vehicles with Business Mileage
	Less than 2 Tons	2 but less than 3 Tons	3 but less than 5 Tons	5 Tons and over, Rigid	5 Tons and over, Articulated	
	PROPORTIONS OF ALL VEHICLES (a) (PER CENT)					
59.8	93.1	95.0	93.9	98.2	99.2	71.9
	AVERAGE ANNUAL MILEAGE PER VEHICLE (MILES)					
8,640	5,730	5,700	6,280	11,040	16,880	8,850
	BUSINESS MILEAGE AS PROPORTION OF ALL MILEAGE (PER CENT)					
86.7	97.9	98.2	96.6	98.6	99.7	92.0
	FUEL CONSUMPTION (M.P.G.)					
20.2	12.1	11.0	9.4	8.3	6.4	12.3
	MILEAGE WITH LOAD—PROPORTION OF BUSINESS MILEAGE (PER CENT)					
61.1	68.6	65.7	65.0	60.0	59.0	61.4
	AVERAGE LOAD PER VEHICLE WHILE LOADED (TONS)					
0.35	1.18	1.98	3.19	5.10	11.53	2.69
	AVERAGE ANNUAL TON-MILEAGE PER VEHICLE (TON-MILES)					
1,610	4,560	7,270	12,590	32,690	114,390	13,430

(a) Vehicles in each category with business mileage as a proportion of all goods-carrying vehicles.

Analysis by Main Area of Operation: The table that follows deals again with goods-carrying vehicles and analyses their main characteristics according to the area of operation ("metropolitan" in the context of the table refers to Hobart and Suburbs). "Other areas mostly within (or beyond) 35 miles of base" refers to town and country districts outside the metropolitan area.

Analysis by Main Area of Operation, 1963

Interstate	Within Metropolitan Area	To and from Metropolitan Area	Other Areas Mostly Within 35 Miles of Base	Other Areas Mostly Beyond 35 Miles of Base	All Goods-Carrying Vehicles with Business Mileage
PROPORTION OF ALL VEHICLES (PER CENT)					
(a)	14.3	11.8	67.3	6.3	100.0
AVERAGE ANNUAL MILEAGE PER VEHICLE (MILES)					
(a)	9,510	9,190	8,090	14,210	8,850
BUSINESS MILEAGE—PROPORTION OF ALL MILEAGE (PER CENT)					
(a)	91.3	93.7	91.3	94.6	92.0
FUEL CONSUMPTION (M.P.G.)					
(a)	15.1	11.7	12.8	8.9	12.3
MILEAGE WITH LOAD—PROPORTION OF BUSINESS MILEAGE (PER CENT)					
(a)	59.9	59.4	63.1	55.1	61.4
AVERAGE LOAD PER VEHICLE WHILE LOADED (TONS)					
(a)	1.34	3.40	2.37	5.49	2.69
AVERAGE ANNUAL TON-MILEAGE PER VEHICLE (TON-MILES)					
(a)	6,980	17,380	11,070	40,640	13,430

(a) Not calculated separately.

Analysis by Main Use of Vehicle: The next table analyses the characteristics of goods-carrying vehicles according to the way in which they are mainly used, the distinction being between those used by owners in their own business (excluding general carrying) and those used by their owners in carrying for clients.

Analysis by Main Use of Vehicle, 1963

In Carrying for Hire or Reward—			In Own Business	All Goods-Carrying Vehicles with Business Mileage
Mainly for One Client	For More Than One Client	Total		
PROPORTION OF ALL VEHICLES (PER CENT)				
5.9	9.4	15.3	84.7	100.0
AVERAGE ANNUAL MILEAGE PER VEHICLE (MILES)				
13,190	14,260	13,850	7,890	8,850
BUSINESS MILEAGE—PROPORTION OF ALL MILEAGE (PER CENT)				
97.1	98.5	98.0	90.1	92.0
FUEL CONSUMPTION (M.P.G.)				
7.4	8.6	8.1	14.8	12.3
MILEAGE WITH LOAD—PROPORTION OF BUSINESS MILEAGE (PER CENT)				
57.1	62.1	60.3	61.8	61.4
AVERAGE LOAD PER VEHICLE WHILE LOADED (TONS)				
6.74	5.62	6.01	1.57	2.69
AVERAGE ANNUAL TON-MILEAGE PER VEHICLE (TON-MILES)				
49,280	48,990	49,100	6,900	13,430

Analysis by Type of Goods Mainly Carried: The following table analyses the characteristics of goods-carrying vehicles according to the types of goods mainly carried:

Analysis by Type of Goods Mainly Carried, 1963

Fresh Fruit and Vegetables	Farm Produce n.e.i. and Farm Supplies	Food, n.e.i.	Timber	Mine and Quarry Products	Building and Construction Materials and Hardware	Tools of Trade, Servicing and Maintenance Equipment, Towing	No Particular Type of Goods	All Goods Carrying Vehicles with Business Mileage
PROPORTION OF ALL VEHICLES (PER CENT)								
(a)	30.2	8.3	6.4	6.5	3.6	22.0	8.2	100.0
AVERAGE ANNUAL MILEAGE PER VEHICLE (MILES)								
(a)	5,410	10,540	9,970	13,930	7,380	9,630	12,470	8,850
BUSINESS MILEAGE—PROPORTION OF ALL MILEAGE (PER CENT)								
(a)	84.2	96.5	91.1	97.7	98.1	88.7	96.1	92.0
MILEAGE WITH LOAD—PROPORTION OF BUSINESS MILEAGE (PER CENT)								
(a)	54.8	73.9	50.9	57.0	65.6	67.0	61.6	61.4
AVERAGE LOAD PER VEHICLE WHILE LOADED (TONS)								
(a)	1.26	1.57	8.79	5.49	2.86	0.42	5.65	2.69
AVERAGE ANNUAL TON-MILEAGE PER VEHICLE (TON-MILES)								
(a)	3,140	11,810	40,640	42,560	13,570	2,380	41,710	13,430

(a) Not calculated separately.

Analysis by Kind of Business: The last table analyses vehicles according to the type of business in which they are used:

Analysis by Kind of Business, 1963

Rural Industries	Manufacturing	Building and Construction	Retail Trade n.e.i. including Amusements and Personal Service	Finance and Property, Wholesale Trade	Carrying for Hire or Reward	All Goods-Carrying Vehicles with Business Mileage	
PROPORTION OF ALL VEHICLES (PER CENT)							
32.7	..	8.3	15.8	11.6	7.8	9.4	100.0
AVERAGE ANNUAL MILEAGE PER VEHICLE (MILES)							
5,410	..	10,860	9,930	9,600	9,880	14,030	8,850
BUSINESS MILEAGE—PROPORTION OF ALL MILEAGE (PER CENT)							
84.6	..	94.4	90.5	91.6	91.7	98.4	92.0
MILEAGE WITH LOAD—PROPORTION OF BUSINESS MILEAGE (PER CENT)							
55.6	..	54.0	66.9	69.9	65.1	61.9	61.4
AVERAGE LOAD PER VEHICLE WHILE LOADED (TONS)							
1.29	..	4.64	2.45	0.50	2.40	5.61	2.69
AVERAGE ANNUAL TON-MILEAGE PER VEHICLE (TON-MILES)							
3,290	..	25,720	14,750	3,050	14,190	47,960	13,430

CIVIL AVIATION IN TASMANIA**Historical***Early Flights*

A significant event in the history of aviation in Tasmania occurred on 16th December, 1919, when Lieut. Arthur Long of the Army Flying Corps crossed Bass Strait, from Stanley to Port Melbourne, a distance of 200 miles. He flew a Boulton Paul aircraft and, after making an emergency landing at the Victorian seaside town of Torquay, reached Melbourne six hours after leaving Launceston. Today's airliners make the trip in under an hour.

Arthur Long continued his interest in commercial aviation, and shortly after his Bass Strait crossing, commenced an aerial newspaper carrying business between Launceston and Hobart. In this venture he was assisted by his Army Flying Corps colleague, Mr. E. Cumming.

Mr. L. Johnson began a Launceston-Flinders Is. service in 1932 using a Desoutter monoplane and, in the same year, Victor and Ivan Holyman began a similar service with a De Havilland Fox Moth.

Melbourne Service

The Holyman brothers were grandsons of William Holyman who had pioneered shipping in Tasmania from 1850. The Holyman brothers were far-sighted and entered into partnership with Johnson under the name of Tasmanian Aerial Services Pty. Ltd. Services were extended to Smithton and King Island and, in 1933, a De Havilland 6-passenger Dragon was purchased to extend the services to Melbourne.

The trip to Victoria was by today's standards a hazardous one. There were no special meteorological services to aid pilots, and aircraft flew at altitudes of three or four thousand feet compared with altitudes of 18,000 to 25,000 feet used on today's flights.

Tasmanian Aerial Services Pty. Ltd. became Holyman Airways Pty. Ltd. in 1933 and, a year later, commenced a Bass Strait service with DH86 Dragon aircraft.

Only 18 days after the start of the service, one aircraft, the "Miss Hobart", disappeared off Wilson's Promontory with ten passengers and the pilot, Victor Holyman. A year later another aircraft, the "Loina", crashed off Flinders Island with the loss of three passengers and both pilots.

Ivan Holyman sought better aircraft and, in 1936, the "Bungana", a DC2, arrived in Australia to enter the Bass Strait service. It was the first modern airliner by today's standards and proved to be a milestone in Australia's aviation history.

Formation of A.N.A.

In 1936, Holyman Airways and Adelaide Airways Ltd. merged to become Australian National Airways Ltd. and operated services between all States. During the war years 1939-1945, operations of the company included extensive troop movement to all parts of Australia and New Guinea.

Formation of T.A.A.

In 1946, T.A.A. was established by the Commonwealth Government and immediately started services to Tasmania in competition with Australian National Airways.

Formation of Ansett/A.N.A.

Australian National Airways and Ansett amalgamated in 1957 to form Ansett/A.N.A. The new company took over Australian National Airways' routes and, with T.A.A., continued to provide regular passenger and freight services between Smithton, Wynyard, Devonport, Launceston, Hobart, Flinders Island, King Island and Melbourne.

Intra-State Services

Because of its geographical position and its topography, Tasmania has gained considerable benefits from air transport. These benefits will continue as more modern aircraft provide improved communications between Tasmania and the continental States. Supplemental intra-state services using Beechcraft twin engine aircraft were commenced in Tasmania during May, 1964. As a result, regular air service connections are provided between Hobart, Launceston, St. Helens, Devonport, Wynyard, Smithton and Strahan, thereby reducing travel time between these centres. When the Queenstown aerodrome was completed towards the end of 1964, Queenstown was also included on this intra-state airline network.

Administration of The Air Navigation Act and Regulations in Tasmania

The *Air Navigation Act* 1920-60 and Air Navigation Regulations made under the Act are administered in respect of Tasmania by the Department of Civil Aviation through the Regional Director, Victoria-Tasmania region.

Functions of the Department of Civil Aviation

The functions of the Department include: (a) registration and marking of aircraft; (b) determination of airworthiness requirements, issue of certificates of airworthiness and of type approval, and supervision of aircraft design; (c) licensing of pilots, flight navigators, flight radio operators, flight engineers and aircraft maintenance engineers, and supervision of the work of such licensed personnel; (d) licensing of airline, aerial work and charter operators and supervision of their operations; (e) provision and maintenance of aeronautical communications, navigational aids, government aerodromes and landing grounds and the licensing of non-government owned aerodromes; (f) operation of air traffic control, communications, aeronautical information, search and rescue and fire fighting services; (g) investigation of aircraft accidents, incidents and defects; and (h) prescription of operational standards for all classes of operation and all types of aircraft.

Classification of Flying Activities

Flying activities are classified by Regulation into the following well defined categories:

(a) *Private Operations*: Private operations are classified as operations where aircraft are employed for the personal use of the owner. A passenger may be carried on a private operation but, if this is done, no remuneration may be received by the pilot or the owner of the aircraft. The extent of private operations within Tasmania may be gauged by the fact that there were 150 licensed private pilots in the State in 1964.

(b) *Aerial Work Operations*: Aerial work operations are classified as commercial operations in which an aircraft is used for aerial survey, aerial spotting, aerial agriculture, aerial advertising, flying training, aerial ambulance functions, police or customs functions and the carriage of goods owned by the pilot, the owner or hirer of the aircraft for purposes of trade. Within Tasmania

there were three licensed flying training organisations and three aerial agricultural organisations which carried out most of the aerial work activities within the State in 1964.

(c) *Charter Operations:* Charter operations are classified as operations where aircraft are used for the carriage of passengers or cargo, for hire or reward, but not according to fixed schedules, or to and from fixed terminals. There were four licensed charter operators based in Tasmania in 1964.

(d) *Regular Public Transport:* Regular public transport operations are defined as air services in which aircraft are available for the transport of members of the public or for the transport of their cargo for hire or reward, and which are conducted in accordance with fixed schedules to and from fixed terminals over specified routes. T.A.A. and Ansett/A.N.A. provide all of the regular public transport services which are operated to or within Tasmania.

Tasmanian Aerodromes

At the end of 1965, Tasmania was served by the following licensed or Government aerodromes ("Government" in this context means Commonwealth):

Hobart

Hobart Airport is a Government aerodrome situated eleven miles east of the capital. It was completed in 1956 and consists of a sealed gravel runway 5,800 feet by 200 feet, with sealed gravel taxiways 50 feet wide, and a sufficient area of sealed apron space for passenger and freight traffic.

An imposing terminal building was completed in 1958 at a cost of \$200,000. Airport buildings necessary for the maintenance of the airport, and radio navigation and radio communication equipment associated with the airport, have been recently completed. Extension and strengthening of the runway, taxiway and aprons to take Electra and DC9 aircraft at full weight will be completed in 1966. (Boeing 727 aircraft used the airport in 1966 on a few occasions.)

The airport is provided with runway lighting, high intensity approach lighting, an instrument landing system, distance measuring equipment, visual-aural radio range, a non-directional beacon, and most comprehensive radio communications equipment.

Launceston

Situated 10 miles south-east of Launceston, this Government airport has the eighth greatest volume of passengers at airports in the Commonwealth (Hobart having moved into seventh place in 1963-64). It has recently undergone extensive aircraft movement area developmental works, including lengthening of the runway at a cost in excess of \$2,000,000. Work commenced in 1965 on a new terminal building and maintenance depot to be completed in 1966.

Developed in the early 1930's, the 'drome was the base from which Holyman and Johnson operated their various Bass Strait services. It served as an R.A.A.F. training base in World War II, and thereafter was altered to meet the demands of civil operations.

In addition to regular airline operations, the airport serves the interests of flying training and other light aircraft charter and aerial work operations. An all-over grassed area is available for these activities.

Launceston airport is provided with an instrument landing system, a visual-aural range, a non-directional beacon, distance measuring equipment, runway lighting and high intensity approach lighting and radio communica-

tions equipment. With the completion of runway works and construction of the terminal, Launceston airport will be one of the most up-to-date airports in the Commonwealth.

Devonport

The Devonport Government aerodrome was originally constructed in the early 1930's. In 1950 it was developed to handle DC3, DC4 and Viscount type aircraft and is now active with regular public transport, aerial work, charter, flying training and private operations. It is proposed to provide a new operations building at Devonport in the near future.

The aerodrome is equipped with night lighting, a non-directional beacon, a visual-aural range and distance measuring equipment, whilst aircraft communications are provided by the aeradio station on the aerodrome.

Wynyard

The Wynyard Government aerodrome is adjacent to the southern side of the town. Two sealed runways 4,400 feet and 3,900 feet long respectively provide for regular public transport operations, charter, aerial work and private operations.

Aircraft communications equipment is provided on the aerodrome and radio navigation equipment consists of a non-directional beacon and distance measuring equipment.

King Island

King Island airport is a Government aerodrome situated four miles north-east of Currie. It consists of an area of 230 acres within which three gravel runways have been constructed.

Radio navigational equipment includes distance measuring equipment and a non-directional beacon, whilst radio communications with aircraft and other communications centres are maintained through the aeradio station which is situated on the aerodrome.

Flinders Island

Flinders Island aerodrome is situated three miles north of Whitemark. It consists of an area of 331 acres within which three grassed landing strips strengthened with some gravel have been constructed.

The aerodrome is equipped with a non-directional beacon and distance measuring equipment to provide for aircraft navigation, whilst communications with aircraft and other communications centres are maintained through the aeradio station constructed on the aerodrome.

Smithton

Situated two miles west of Smithton, this licensed aerodrome, which was originally developed in the 1930's for Bass Strait services, has a sealed gravel runway 5,300 feet long and 150 feet wide. It is owned by the Tasmanian Transport Commission and is used for regular public transport operations and itinerant charter and private flights. Smithton is not equipped with radio navigation aids or aircraft communications facilities.

Bridport

The Bridport licensed aerodrome was developed for the purpose of air-freighting local produce, mainly fish, direct to Victoria. The landing strip consists of a grassed area 4,000 feet long by 400 feet wide. It is owned by the North Eastern Aerodrome Company Pty. Ltd. and currently serves itinerant charter, aerial work and private operations.

St. Helens

St. Helens is a licensed aerodrome owned and operated by the Municipality of Portland. It was the first aerodrome constructed in Tasmania under the Commonwealth Aerodrome Local Ownership Plan and was officially opened in April, 1963. A grassed strip 3,900 feet long and 300 feet wide is of sufficient dimension to permit operations by DC3 and F27 type aircraft. The aerodrome currently serves the regular public transport, charter, aerial work and private operation requirements for the area.

Queenstown

The Municipality of Queenstown provided an authorised landing area for light aircraft in 1937. In 1963, work was commenced on the construction of a runway suitable for the operation of DC3 type aircraft at Queenstown under the Local Ownership Plan. With the completion of this aerodrome, Queenstown was included in the intra-state services provided by T.A.A. Beechcraft aircraft.

Strahan

The port of Strahan serves the West Coast of Tasmania and, in particular, the Queenstown and Zeehan areas. The aerodrome at Strahan was constructed under the Commonwealth Aerodrome Local Ownership Plan and is owned by the Municipality of Strahan. It was opened for regular public transport operations by the Premier of Tasmania in May, 1964 since when T.A.A. have provided Strahan with a regular public transport service using Beechcraft aircraft.

Cambridge

This Government aerodrome was constructed during the early days of aviation and comprised four runways. After World War II, it was used extensively for DC3, DC4 and Convair regular passenger services. However, with hills in the near vicinity the site could not be developed and, following construction of the new Hobart Airport, it was retained for flying training activities and light aircraft operations.

Authorised Landing Grounds

In addition to the foregoing licensed and Government aerodromes, there are many other landing grounds which are classed by the Department of Civil Aviation as Authorised Landing Grounds.

This classification is accorded to landing grounds other than Government or licensed aerodromes which are of adequate size for the type of aircraft which it is proposed will land there. These fields must generally be further than 5 miles from an established aerodrome, the pilot must obtain permission for its use from the owner of the land, and the aircraft must not pass over a populated area at a height below 1,500 feet in landing at or taking off from the landing ground in question.

Passenger, Freight and Aircraft Movements

The following table has been compiled to show the volume of activity at the State's principal airports; the following definitions apply:

Passengers: The figures for fare-paying passengers at each airport are the sum of embarkations and disembarkations.

Freight: The figures are the sum (in tons of 2,000 lbs.) of freight (including mail) loaded and unloaded at each airport.

Aircraft Movements: A take-off is one movement, a landing another.

Principal Airports
Passengers, Freight and Aircraft Movements (a)

Year	Hobart	Launceston	Devonport	Wynyard	King Is.	Flinders Is.
PASSENGERS ('000)						
1962-63	128	131	36	30	14	9
1963-64	143	142	39	32	15	9
1964-65	158	152	45	35	15	11
FREIGHT (SHORT TONS)						
1962-63	4,958	7,354	598	630	502	337
1963-64	4,996	7,934	532	532	422	921
1964-65	5,800	8,486	734	601	446	784
AIRCRAFT MOVEMENTS						
1962-63	6,278	11,062	2,014	2,102	1,314	746
1963-64	7,366	11,536	2,774	2,580	1,422	932
1964-65	8,303	12,600	3,436	3,627	1,384	1,060

(a) See definitions prefacing table.

Comparison with Principal Australian Airports

The next table shows the volume of activity at the principal Australian airports in terms of the number of passengers, freight and aircraft movements. Details of international services have been excluded so that comparisons are purely in terms of domestic traffic (international services are centred on Melbourne, Sydney, Brisbane and Perth).

Australia—Principal Airports
Passengers, Freight and Aircraft Movements (a), 1964-65

Airport	Passengers	Freight (Short Tons)	Aircraft Movements
Sydney	2,086,571	28,432	58,960
Melbourne	1,587,833	33,774	46,461
Brisbane	754,296	13,719	25,636
Adelaide	618,101	8,197	18,138
Perth	209,972	4,770	7,023
Canberra	318,882	1,975	15,408
Hobart	158,287	5,800	8,303
Launceston	152,175	8,486	12,600

(a) See definitions prefacing this section.

POSTS, TELEGRAPHS AND TELEPHONES

Development of Communication Services

General

The web of communications provided by the Post Office has played an important role in the development that has taken place in Tasmania's primary and secondary industries. Particularly during the past 10 years, Tasmania has passed through a period of remarkable growth and change. Population growth,

the expansion of commerce and industry, and the initiation of large developmental projects, all have led to an increasing demand for a high standard of communication services.

In the decade ending June, 1965, the number of telephone calls in Tasmania increased from 28 million to 71 million annually. TRESS, the automatic telegraph switching system which was introduced in 1959, has streamlined the public telegraph services and TELEX, which had one Tasmanian subscriber in 1957, now has 72. On 27th June, 1966, the TELEX (teleprinter exchange) service became fully automatic and subscribers are now able to contact each other without the aid of an exchange operator. In the same decade, National T.V. was introduced and the Post Office in Tasmania maintains and operates two national transmitters—one on Mt. Wellington and the other on Mt. Barrow. Additionally, translator stations have been established to bring T.V. to the populated areas of the west and far north-west. The postal service has been progressively mechanised and nearly 60 million postal articles are handled in Tasmania annually.

The Postal Service

Relatively "organised" postal services commenced in Van Diemen's Land in 1812, when John Beamont was gazetted as the first postmaster of Hobart Town, and, in 1816, the first long distance overland mail service in Australia was begun when Robert Taylor contracted to carry mails on foot once a fortnight from Hobart Town to Port Dalrymple (Launceston).

A steady improvement of administration and services occurred and on the 1st June, 1832, the Post Office became a Government Department. Twenty post offices were established and mails were carried largely by convicts. This use of convict mail staff was abolished in 1841, resulting in greater efficiency in the delivery of letters.

Stamps were introduced in 1853, and to meet the increasingly complex needs of commerce and private citizens, money order facilities were introduced at all post offices in 1865. The penny post was adopted, at first for town areas only, in 1870. In 1882, street letter receivers were installed at Hobart and savings bank facilities were included in post offices. Other facilities introduced before 1901 were: oversea parcels post, 1887; postal notes, 1889; and letter cards, 1898.

Since Federation in 1901, when the Post Office became a Commonwealth Department, the Australian Post Office has had the responsibility of carrying out reforms and improvements in services and facilities on a Commonwealth-wide basis, and in this Tasmania has shared. New developments in transport, such as the railways in the 1870's and aircraft in the 1920's, have ensured greater regularity and speed in delivery of mails. Operation "Post Haste" was introduced in 1959 for the carriage by air of letters below a specified size, without extra charge, to any centre in Australia.

All letter class mail to and from Tasmania is carried by air, whilst the bulk of "Other Article" mail is received and despatched on a near daily basis on the ships "Princess of Tasmania" and "Bass Trader". In the year ended June, 1965, 50 million items of letter class mail were carried by air across Bass Strait and 10 million postal articles were transported by ship. Within the State, mail is distributed daily to 500 post offices.

Telecommunications

The first *telegraph* line between Hobart and Launceston was laid in 1857 and, two years later, Victoria and Tasmania were joined by a submarine cable. However, in 1861 it failed through wearing on rocks and shoals. A second

and more successful cable was laid in 1869 by the Eastern Extension Telegraph Company. Communication by telegraph with overseas countries followed the completion of the Overland Telegraph between Adelaide and Darwin in 1872.

The first telephone line constructed in Tasmania was between the Hobart Telegraph Office and Mt. Nelson Signal Station in 1880. By 1883, telephone exchanges had appeared in Hobart and Launceston and the first country trunk telephone exchange in Australia was opened at New Norfolk in 1888.

It was not until 1936 that a submarine *telephone* cable linking Tasmania with Victoria was opened, enabling Tasmanians to speak by telephone with subscribers in other States and overseas countries. At the time, it was the longest submarine telephone cable of its type in the world and its technical specifications set new standards. It was designed to carry simultaneously, over a single conductor, a large number of separate telephone conversations, and an even greater number of telegraph messages. In addition, it provided a high quality channel for the transmission of broadcast programmes in both directions.

Since the cessation of hostilities in 1945, there has been a strong demand for better and expanded communication services, and each year, as industries expand and population increases, the Post Office must meet this demand.

Present policy places increased emphasis on the extension of automatic operation in the Australian telephone system. The ultimate objective is a system which will permit any telephone user to dial any subscriber in Australia. This is consistent with world-wide trends and a great deal of progress has been made with the provision of automatic exchanges (using the new "Crossbar" equipment), the provision of high capacity trunk routes, and the introduction of subscriber trunk dialling.

High capacity cables already connect Australia with the populated areas of the world and, throughout the Commonwealth, a revolution has been taking place to transform the major trunk routes into giant telecommunications super-highways. These great new trunk systems, known to the Post Office as the Broadband Network, are marked only by isolated repeater or booster stations along the side of highways or on mountain tops. They will carry previously unthought of volumes of telecommunications traffic and, by the end of 1966, this huge national network—involving a cost of \$64 million—will cover 6,300 miles throughout the eastern half of Australia and 400 miles in Western Australia. By 1971 the main spine will reach from Cairns in the far north of Queensland, through Brisbane, Sydney, Canberra and Melbourne to Hobart and from Melbourne across to Adelaide, Perth and north to Port Hedland, W.A. Spurs will lead out to virtually every major centre of population in all States and between the *Seacom* and *Compac* cables connecting Australia with overseas countries.

Tasmania is being "joined" to Victoria by a microwave radio link with its terminal at Launceston. On the hill tops of Mounts Dismal and Waterhouse in the north-east and on Mt. Tanner, Flinders Island, are the huge towers and parabolic reflectors that will beam telephone, telegraph and telex messages, picturegrams, and radio and television programmes to and from Tasmania.

Micro-wave systems require *line of sight* between repeater stations set on hilltops about 35 miles apart. Across Bass Strait are two long overwater hops, with the earth's curvature presenting a *line of sight* problem. The over-water span from Victoria to Flinders Island covers a distance of 99 miles and the *line of sight* is only a few feet higher than a line making a tangent with the earth's curvature. There is also a span of 69 miles from Mt. Tanner to the Tasmanian coast. These "long hops" were achieved by using giant-sized transmitting and receiving "dishes" and a lower than usual frequency signal.

Tasmania's internal communication system is being geared to cater for Subscriber Trunk Dialling. Burnie and Launceston have been linked by coaxial cable and a microwave radio link is at present being installed between Launceston and Hobart. Repeater stations for this link are at Cleveland and on Mt. Seymour. The Hobart terminal will be on Chimney Pot Hill (near Fern Tree). Both the coaxial cable and the microwave links will provide hundreds of telecommunication channels, and the way will be open for subscriber trunk dialling between Tasmania and other Australian States.

Subscriber Trunk Dialling has a number of advantages. For the customer, it means a speedier and cheaper service; speedier, because there is no need to book calls through a telephone operator, and cheaper, because subscribers pay only for the time they are engaged on the telephone line (and not for three-minute minimums). It is estimated that, within the next ten years, over 70 per cent of all trunk calls made in Australia, including Tasmania, will be dialled direct by subscribers.

Employment

The next table analyses the total number employed by the Department in Tasmania at 30th June, 1964, and also gives the total number employed over a ten-year period. Employment categories are:

Temporary Staff: These are engaged by the Public Service Board and their employment by the Department beyond the period of one year requires the Board's further approval.

Exempt Staff: These are persons exempt from the provisions of the *Public Service Act*. The Department is not required to obtain the approval of the Commonwealth Public Service Board before employing them, or to seek Board approval to continue their employment beyond one year. The Public Service Board's approval for the creation of positions is, of course, still necessary (the Board approves the "offices" but the Department engages the "officers").

Permanent Staff: These are members of the Commonwealth Public Service.

Postmaster-General's Department—Persons Employed

Particulars	Number at 30th June, 1964	Year	Total Number at 30th June
Full-time Employees (a)—		1955 ..	3,677
Permanent Officers	2,556	1956 ..	3,783
Temporary and Exempt Officers (b) ..	813	1957 ..	3,942
		1958 ..	3,957
Total	3,369	1959 ..	4,012
		1960 ..	3,995
Others—		1961 ..	4,066
Non-official Postmasters and Staff ..	485	1962 ..	4,077
Telephone Office Keepers	19	1963 ..	4,144
Mail Contractors (c)	198	1964 ..	4,184
Part-time Employees	113		
Total	815		
Grand Total	4,184		

(a) Full-time employees are those directly under the control of the Department. The remainder shown as "Others" provide services, which may or may not occupy their full time, under contract or in return for payments appropriate to work performed.

(b) Exempt staff are persons exempt from the provisions of the *Public Service Act*.

(c) Includes persons employed to drive vehicles.

Revenue and Expenditure

The table that follows gives details of the financial operations of the Department in Tasmania. Three points of explanation are necessary: (i) financial statistics are compiled with a dissection between operations in the six States and in the Central Office (located in Melbourne); an adequate picture of the financial results of a year's trading can be obtained only from the combined Australian accounts of the Department; (ii) in the expenditure table appear items of a capital nature but the source of funds for this work is not included in the revenue table; (iii) the Department is administered as a business undertaking and pays interest to the Commonwealth Treasury on all capital; interest is not brought to account in the table.

Postmaster-General's Department—Financial Operations in Tasmania (\$'000)

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
REVENUE					
Postal	1,850	2,184	2,198	2,342	2,466
Telegraph	406	460	370	362	388
Telephone	3,988	4,576	4,806	5,210	5,688
Other	298	40	10	14	24
Total	6,542	7,260	7,384	7,928	8,566
EXPENDITURE					
From Ordinary Votes—					
Salaries and Payments in Nature of Salary	3,504	3,510	3,538	3,606	3,718
Administration	312	382	412	382	492
Stores and Material	264	232	208	134	112
Mail Services	254	262	264	266	266
Engineering Services (Other than Capital Works)	2,966	2,832	3,132	2,570	2,896
Total	7,300	7,218	7,554	6,958	7,484
Rent, Repairs and Maintenance	102	66	126	118	92
Capital Works and Services (a)	2,720	2,780	3,600	4,628	5,084
Other	4	4	4	..	..
Grand Total	10,126	10,068	11,284	11,704	12,660

(a) Source of funds for this expenditure not shown under "Revenue".

Operations of the Department

Apart from its obvious role of providing communication facilities through various media, the Department also acts as an agent for a number of other instrumentalities in transactions which include: savings bank deposits and withdrawals; child endowment payments; soldiers', sailors' and airmen's allotments; payment of age, invalid and widows' pensions; War Service Homes repayments; sale of State duty stamps, &c.

The next section deals with the principal activities of the Department in Tasmania:

Money Orders and Postal Notes

The money order method of transmitting money through post offices is more popular than the use of postal notes (Australian figures for payments, in 1963-64, were \$m339 in respect of money orders, and \$m18 in respect of postal notes). The use of these media, through Tasmanian post offices, is described in the next table:

Money Orders and Postal Notes Issued and Paid in Tasmania

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
MONEY ORDERS					
Issued—					
Number ('000)	264	260	284	307	342
Value (\$'000)	4,358	4,564	6,796	7,932	8,548
Paid—					
Number ('000)	198	203	221	242	253
Value (\$'000)	3,744	3,978	6,160	7,266	7,852
POSTAL NOTES					
Paid—					
Number ('000)	335	232	218	247	208
Value (\$'000)	292	226	216	240	212

Mail Services

In the following table, some measure is given of the volume of mail handled in Tasmania by the Department. These definitions are applicable to the articles handled: (i) "letters, post-cards and letter-cards"—includes letters, cards and other postal articles (including certified mail) enclosed in envelopes and sorted with letters; (ii) "newspapers and packets"—includes postal articles (including certified mail) not included in the letter mail; (iii) "parcels"—includes registered, cash on delivery, duty parcels and certified mail parcels; (iv) "registered articles, other than parcels"—excludes certified mail.

The item "Posted in Tasmania" combines two items: (i) posted for delivery within Australia; (ii) posted for delivery overseas.

Mail Services—Operating Statistics

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
LETTERS, POSTCARDS AND LETTER-CARDS ('000)					
Posted in Tasmania	41,200	41,588	40,673	43,096	45,738
Received from Overseas (a) ..	1,820	1,654	1,930	2,107	1,714
NEWSPAPERS AND PACKETS ('000)					
Posted in Tasmania	7,529	7,561	7,518	6,897	7,328
Received from Overseas (a) ..	2,100	1,871	2,196	2,285	2,012

Mail Services—Operating Statistics—continued

Particulars	1959-60	1960-61	1961-62	1962-63	1963-64
PARCELS ('000)					
Posted in Tasmania	216	216	224	213	214
Received from Overseas (a) ..	17	15	18	24	18
REGISTERED ARTICLES, OTHER THAN PARCELS ('000)					
Posted in Tasmania	452	399	385	375	367
Received from Overseas (a) ..	4	5	5	4	4

(a) For delivery in Tasmania.

Telegrams

At 30th June, 1964, there were 500 telegraph offices in Tasmania (excluding multi-coin public telephones from which telegrams can be sent). The use made of this communication medium is described in the following table:

Telegrams Dispatched ('000)

Particulars	1959-50	1960-61	1961-62	1962-63	1963-64
Dispatched in Tasmania—					
To Places within Australia ..	537	528	513	515	548
To Other Countries ..	21	19	21	21	21

Telephone Services

At 30th June, 1964, there were 78,041 telephone instruments in operation in Tasmania; 74,746 were subscribers' instruments, 1,086 were public telephones and 2,209 were other local instruments. The total number of instruments per 100 of population approximated 21.4.

The next table shows the extension of this facility in Tasmania over a five-year period. "Services in operation", an item appearing in the table, is a composite figure made up as follows: (i) the number of ordinary exchange services, i.e. telephone services with sole use of an exchange line; and (ii) the unduplicated number of additional services provided by use of the duplex system, i.e. telephone services on which individual calling, separate metering and secrecy provisions are provided for two subscribers using a single exchange line.

Telephone Services at 30th June—Operating Statistics

Particulars	1960	1961	1962	1963	1964
Exchanges in Operation (a) (No.)	391	383	377	371	368
Services in Operation (b) ('000)	47	49	51	54	57
Instruments in Operation ('000)	63	67	70	75	78

(a) Offices with one or more subscribers' lines connected.

(b) See explanation prefacing table.

Post Offices

The following table shows the types of post office in operation in Tasmania at 30th June, 1964 and also the total number of post offices over a five-year period:

Post Offices			
Type	Number at 30th June, 1964	Year	Total Number at 30th June, (c)
Official	54	1960	511
Non-Official (a) ..	446	1961	512
Telephone Offices(b)	19	1962	506
		1963	502
Total ..	519	1964	500

(a) Smaller types of post offices, conducted by suitable persons for payment of an allowance based upon business transacted. Staff are not members of the Commonwealth Public Service.

(b) Offices from which trunk line and local calls may be made, and telegrams lodged, but which do not provide other postal facilities. Multi-coin telephones are not included (although trunk call and telegram services are provided by such instruments).

(c) Excluding telephone offices.

RADIOCOMMUNICATION

General

The section which follows relates to radiocommunication (radio telegraph and radio telephone) stations only; particulars of broadcasting stations and of broadcast listeners' licences are specifically excluded and are dealt with in a subsequent section.

To operate a radio transmitter as previously described, it is necessary to obtain a licence from the Radio Branch of the Postmaster General's Department which is responsible for frequency allocation and for certain inspectorial functions. In the table that follows, the term "authorised" refers to equipment licensed by this authority.

Stations in Tasmania

The table gives a classification of the radiocommunication stations operating in Tasmania over a five-year period. Some examples of the use to which this form of communication is put, include:

- (i) Police networks for intra-state signals and for link with police cars.
- (ii) Coastal radio service to ships at sea. (The same service provides links with outpost transmitters in the State's remote areas, e.g. Port Davey.)
- (iii) Army network with direct link to Melbourne.
- (iv) Fire Brigade network operating in area controlled by each authority.
- (v) Special fishermen's network with base stations at Triabunna, Dunalley, Bicheno, St. Helens, Lady Barron, Currie, and Strahan.
- (vi) Lighthouse network (the source of weather reports at remote coastal stations).
- (vii) Special purpose networks of various authorities, e.g. Hydro-Electric Commission, Forestry Commission, ambulance services, &c.

- (viii) Marine Boards' V.H.F. networks (on single international frequency) for ship-to-shore link with oversea vessels.
- (ix) The "mutton birders" network—operating from Whitemark on Flinders Island when the "birders", in the season, inhabit the deserted Straits Islands.
- (x) Mine networks, e.g. central control linked to outposts engaged in blasting.
- (xi) Taxi networks.

Number of Radiocommunication Stations Authorised at 30th June
Stations Able to Transmit and Receive

Particulars	1961	1962	1963	1964	1965
Fixed Stations (a)—					
Aeronautical	7	7	7	9	9
Outpost (b)	16	13	16	15	17
Other	30	27	30	36	38
Total	53	47	53	60	64
Land Stations (c)—					
Aeronautical	7	7	7	8	8
Base Stations for—					
Land Mobile Services ..	134	146	164	202	243
Harbour Mobile Services ..	4	7	9	5	6
Coast	20	20	21	21	21
Special Experimental	7	11	11	12	16
Total	172	191	212	248	294
Mobile Stations—					
Aeronautical	(d)	26	28	29	32
Land Mobile Services ..	717	800	1,037	1,404	1,650
Harbour Mobile Services ..	15	16	38	41	50
Outpost	(d)	34	37	45	35
Ships	(d)	176	210	240	279
Total	(d)	1,052	1,350	1,759	2,046
Amateur Stations	149	149	152	160	170
Total	(d)	1,439	1,767	2,227	2,574

(a) For exchange of radio messages with other stations similarly established.

(b) An "outback" station communicating with control stations operated by such organisations as the Royal Flying Doctor Service.

(c) For exchange of radio messages with mobile stations.

(d) Not available.

BROADCASTING AND TELEVISION

General

In Australia, broadcasting and television services are provided both from commercial and Commonwealth Government transmitters; the Federal *Broadcasting and Television Act* 1942-64 governs the operation of services designated the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service.

The National Services

The National Services (both broadcasting and television) are provided by the Australian Broadcasting Commission which has sole responsibility for programme material; the actual transmitters are operated by the Postmaster-General's Department. Owners of broadcast and television receivers are required to pay annual licence fees to the Postmaster-General's Department, and this revenue is used to help pay the cost of operating the National Services.

The Commercial Services

The Commercial Services (both broadcasting and television) are operated under licences granted by the Postmaster-General, who, in exercising his licensing powers, takes into consideration recommendations made by the Australian Broadcasting Control Board. The revenue of the Commercial Services is obtained from advertising.

The Australian Broadcasting Control Board

This authority is responsible for the planning of the broadcasting and television services, and operates under the ministerial jurisdiction of the Postmaster-General. Its duties, with regard to the commercial services, require it: (i) to establish and maintain standards so that adequate and comprehensive programmes are provided by commercial stations; (ii) to advise the Minister in licensing matters; (iii) to hold public enquiries on licensing applications; (iv) to determine conditions subject to which advertisements may be broadcast or televised. Other duties of a more general character require it: (i) to ensure the provision of services according to plans which it prepares and the Minister approves; (ii) to establish and supervise operational standards; (iii) to detect sources of interference, and to give advice and assistance in the prevention of interference; (iv) to determine, subject to any Ministerial direction, the situation, operating power and operating frequencies of stations; (v) to determine hours of operation; and (vi) to regulate the establishment and operation of networks of stations.

The Act requires the Board to consult representatives of commercial broadcasting stations and commercial television stations in exercising its powers and functions in relation to these stations.

The Board has an office in each State, the main responsibilities of which are liaison with the managements of all commercial broadcasting and television stations, monitoring programmes (in relation to observance of Board standards) and undertaking technical work associated with the administration of the services.

Commercial Licences

Until November, 1964, the licence fee for a broadcasting station was \$50 plus one per cent of gross earnings from the sale of station time during the previous financial year. In November, 1964, the charges were amended in accordance with the following scale: gross earnings from advertising under \$m1, one per cent rate applicable; from over \$m1 to \$m2, two per cent; from over \$m2 to \$m4, three per cent; over \$m4, four per cent.

Television stations, up to November, 1964, paid a licence fee of \$200 plus one per cent of the gross earnings from the sale of station time. As from November, 1964, the schedule of charges levied on broadcasting stations was also applied to television stations.

Hours of Service

At 30th June, 1964, eight commercial broadcasting stations in Tasmania were operating; two in the Hobart area averaging 131 hours weekly; six elsewhere in the State averaging 116 hours weekly. The corresponding figures for the two commercial television stations were 55.25 hours weekly in the Hobart area, and 44.25 hours in the Launceston area.

Programme Standards, Commercial Stations*Broadcasting Standards*

Licensees are required to provide programmes in accordance with the standards determined by the Australian Broadcasting Control Board. These standards contain special provisions dealing with family and children's programmes, and with advertisements. During periods when large numbers of children or young persons are likely to be listening, programmes must comprise either "family programmes" which are suitable for people of all ages, or programmes specially designed for children.

There are standards governing the number, duration and suitability of advertisements, e.g. in a sponsored programme, advertising per 15 minutes of programme is limited to 2.5 minutes.

Also under the *Broadcasting and Television Act 1942-64*, licensees are required to broadcast religious services, or other matter of a religious nature during such periods as the Board determines. The minimum time set by the Board is one hour per week but stations are providing, free of charge, as much as two hours weekly for religious broadcasts. The Act also provides that licensees shall, as far as possible, use the services of Australians in the production and presentation of programmes, and that not less than five per cent of the time occupied by the programmes of stations in the broadcasting of music shall be devoted to the broadcasting of works of Australian composers.

Television Standards

The Board's standards provide that, on weekdays between 5.30 p.m. and 7.30 p.m. and at all times before 7.30 p.m. on weekends, the only types of programmes that may be televised are family programmes suitable for all ages, or children's programmes. There are standards governing the number, duration and suitability of advertisements, e.g. in a sponsored programme, the advertising time per 15 minutes of programme is limited to 1.5 minutes. The requirement to transmit religious programmes is contained in the Act, the Board setting the minimum time at 30 minutes weekly. As from January, 1965, the Postmaster General required that the minimum proportion of transmission time to be occupied by Australian programmes should be 50 per cent, and that programmes which are distinctively Australian in content and character should be televised between the hours of 7.30 p.m. and 9.30 p.m. at least two hours weekly; limited "Australian credit" could be obtained for televising programmes produced in British Commonwealth countries. (These requirements relating to Australian content of programmes applied only to metropolitan stations.)

The Commonwealth Film Censorship Board examines all films imported into Australia and, for television purposes, uses these classifications: "G", unrestricted; "A", not suitable for children; "AO", suitable only for adults. Programmes classified as "A" are those not complying with the standards for family and children's programmes; "AO" programmes may be televised only after 8.30 p.m. on any day, or between 1.00 and 3.00 p.m. on school days. Film classifications "A" and "AO" are published in the press and are also screened before each film is televised.

Category of Television Programmes

The following table shows, as varying proportions of transmission time, the types of programme televised in 1963-64 in the Hobart area:

Category of Television Programmes—Hobart, 1963-64 (a)
Proportion of Transmission Time

Programme Category	Hobart Commercial Programmes	Hobart National and Commercial Programmes Combined
	Per Cent	Per Cent
Drama	53.3	40.4
Light Entertainment	15.9	12.2
Sport	6.5	9.0
News	4.4	6.0
"Family"	14.1	12.2
Information	1.4	5.6
Current Affairs	4.1	7.0
The Arts	0.3	3.1
Education	0.0	4.5
Total	100.0	100.0

(a) Source: Australian Broadcasting Control Board.

Television Stations in Operation

The next table gives details of the television stations in operation at 30th June, 1964:

Television Stations in Operation, 30th June, 1964

Call Sign and Channel	Area	Transmitter Location	Height Above Sea Level—Top of Aerial (ft.)	Hours of Service (Weekly)
NATIONAL				
ABT 2	Hobart	Mt. Wellington	4,410	60.50
ABNT 3 (a) ..	N. E. Tasmania	Mt. Barrow	4,780	60.50
COMMERCIAL				
TVT 6	Hobart	Mt. Wellington	4,340	55.25
TNT 9	N. E. Tasmania	Mt. Barrow	4,654	44.25

(a) Transmits programmes originating from ABT 2 (by line-of-sight link).

Relay of Television Programmes from Other States

Viewers in Tasmania do not normally see events in other Australian States as they happen; usually the event is filmed, and the film then flown across Bass Strait. However, the distance across Bass Strait is no longer a barrier to relaying of programmes direct to the transmitters at Mt. Barrow and Mt. Wellington. The 1965 Davis Cup, staged in Sydney, was seen by Tasmanian viewers through a relay system; co-axial cable carried the transmission to Victoria and the signal was beamed to Mt. Barrow via a relay operating on Flinders Island. The final link in the chain was the beaming of the signal from Mt. Barrow to Mt. Wellington.

Television Translator Stations

Tasmania, due to its terrain, has areas where television reception direct from the Mount Wellington or Mount Barrow transmitters is either difficult or impossible. To provide good reception in such areas, translator stations are being installed, the position in April, 1966 being as follows:

Television Translator Stations—Progress of Installation, April, 1966

Area Served	Local Channel	Source of Original Transmission	Classification of Service
IN OPERATION			
Queenstown.. ..	8	TVT 6	Commercial
Rosebery (a) ..	10	(a)	Commercial
Bicheno-Swansea ..	8	TVT 6	Commercial
Stanley	6	TNT 9	Commercial
Gowrie Park ..	1	TNT 9	Commercial
SHORTLY TO OPERATE			
Queenstown.. ..	4	ABT 2	National
Rosebery	1	ABT 2	National
Stanley	1	ABNT 3	National

(a) The Rosebery translator takes its transmission from the Queenstown translator.

In the above table, ABNT₃, transmitting from Mt. Barrow, has been excluded although it receives its programmes by line-of-sight link from ABT₂. The northern transmitter is high-powered and serves a large region whereas the translator stations listed in the table are low-powered and designed to serve small areas.

Microwave Links

The prime sources of programmes in Hobart are the commercial and national studios which are linked to their Mt. Wellington transmitters (TVT₆ and ABT₂) by micro-wave links; the commercial studio in Launceston feeds programmes to its Mt. Barrow transmitter (TNT₉) by the same method. As there is no national studio at Launceston, the transmitter on Mt. Barrow (ABNT₃) relays the Hobart national programmes picked up direct from Mt. Wellington. Whilst no equipment is permanently installed for the purpose, programmes of the commercial stations may also be relayed by establishing a Mt. Wellington-Mt. Barrow link, or vice-versa.

De-icing

In view of the temperature and weather conditions existing at Mt. Wellington and Mt. Barrow, precautions have been necessary to prevent the formation of ice on the aerial elements. The presence of ice would cause changes in the performance of the aerial and the associated transmitter, and spoil the quality of the pictures.

In the case of the aerial at the Hobart national station ABT₂ (Mt. Wellington), the aerial elements are heated by mains power which is switched on automatically by means of a thermostat when the temperature falls below freezing point. In the case of the Hobart commercial station (TVT₆, Mt. Wellington), the junctions between the coaxial feeder lines and the aerial

elements, are protected by small plastic covers. In the case of the Launceston (Mt. Barrow) commercial station TNT₉ and national station ABNT₃, the whole of the aerial is covered by a plastic cylinder. The lower part of the ABNT₃ mast is metal-sheathed to ward off ice which falls from the plastic cylinder and which could damage the mast.

Broadcasting Stations in Operation

The following table gives details of the broadcasting stations in operation at 30th June, 1964:

Broadcasting Stations in Operation at 30th June, 1964

Call Sign	Classification	Location	Hours of Service (weekly)
7ZL	National	Hobart	126.25
7ZR	National	Hobart	125.50
7NT (a)	National	Launceston	126.25
7QN (a)	National	Queenstown	126.25
7HO	Commercial	Hobart	133.00
7HT	Commercial	Hobart	129.50
7AD	Commercial	Devonport	111.50
7BU	Commercial	Burnie	112.50
7EX	Commercial	Launceston	163.00
7LA	Commercial	Launceston	126.00
7QT	Commercial	Queenstown	83.50
7SD	Commercial	Scottsdale	98.00

(a) Transmits, in the main, programmes originating from 7ZL and 7ZR.

Listeners' and Viewers' Licences

Revenue from Licences

The revenue from licensing is shown in couplets with listeners' fees first and viewers' fees second (in \$'000): 1959-60, 392 and 42; 1960-61, 382 and 182; 1961-62, 370 and 276; 1962-63, 358 and 426; 1963-64, 356 and 510. The combined revenue from both types of licence and from combined licences in 1964-65 was \$1,005,000.

Details of Rates

In general, all persons owning a radio or television set (or both) are required to pay an annual licence fee. Terms used in the next table are defined as follows:

Pensioner Rate: While concession rates apply to certain classes of pensioners, licences free of charge may be granted to blind persons over 16 years of age, or to a school.

Zones: Two zones are prescribed, the first when the listener lives within 250 miles of specified broadcasting stations, and the second, when the listener lives anywhere else in Australia. There are no "Zone 2" areas in Tasmania.

Hirer's Licence: Each broadcast or television receiver let out on hire, except those under hire purchase contracts, must be covered by a hirer's licence held by the person or firm from whom the receiver is hired.

Lodging House Licence: Owners of hotels, motels, guest houses, &c. are required to hold a licence for every broadcast or television receiver provided for the use of guests and lodgers.

The schedule of fees is as follows:

Broadcast Listeners' and Television Viewers' Licences—Rates at December, 1965

Licence		Ordinary Rate (\$)	Pensioner Rate (\$)
FOR BROADCAST RECEIVER			
Listener's or Hirer's Licence ..	(Zone 1)	5.50	1.00
	(Zone 2)	2.80	0.70
Lodging House Licence ..	(Zone 1)	5.50	..
	(Zone 2)	2.80	..
FOR TELEVISION RECEIVER			
Viewer's or Hirer's Licence		12.00	3.00
Lodging House Licence		12.00	..
COMBINED LICENCE (FOR BROADCAST AND TELEVISION RECEIVER)			
Combined Receiving Licence		17.00	4.00

Licences in Force

The following table shows the number of listeners' and viewers' licences in force in Tasmania from 1925:

Licences in Force—Listeners' and Viewers' Licences from 1925

Date	Broadcast Listeners'	Television Viewers'	Combined (a)
30th June, 1925 ..	567	..	..
1930 ..	6,048	..	..
1940 ..	42,191	..	..
1950 ..	64,369	..	..
1960 ..	78,900	4,662	..
1961 ..	77,420	18,985	..
1962 ..	75,014	29,003	..
1963 ..	73,760	45,503	..
1964 ..	74,159	55,305	..
1965 (a) ..	62,299	47,779	10,718
31st Dec., 1965 (a) ..	35,518	19,483	44,454

(a) The Combined Receiving Licence was introduced in April, 1965, to be held by those persons owning both a broadcast and a television receiver at the same address. Separate licences are still available for persons owning only one type of receiver.

Licences and Receivers

The number of receivers in use, both for broadcasting and television, exceeds the number of licences, since the householder may operate any number of receivers under the cover of a single licence made out for a specific address. (This concession does not apply to those required to hold lodging house licences.)

Although television transmission did not begin in Tasmania before the first half of 1960 (with ABT2 and TTV6 in Hobart), a few licences were held in the northern areas of the State as early as 1957; the owners of these receivers were able to tune to programmes originating in Victoria but the quality of reception was very variable due to the distance.

Appendix A

PUBLICATION OF TASMANIAN STATISTICS

HOW TO OBTAIN CURRENT PUBLICATIONS

General

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is located on the fourth floor of the *T. and G. Building, Collins Street, Hobart*. Requests for statistical publications can be made by calling at this address; by 'phoning "*Hobart 2-2741*"; or by writing to the *Deputy Commonwealth Statistician, Box 66A, G.P.O., Hobart*.

Service to the public is not restricted to the distribution of publications. If no publication adequately covers the subject matter of the enquiry, then a special extraction of the data required may be undertaken if they are available from the basic records held in the office.

Historical

The first Government Statistician in Tasmania was E. C. Nowell who took up duty in 1867. Before this appointment, statistics had been published in the official "Blue Books" compiled by the Colonial Secretary during the period 1822-1855, and in volumes entitled "Statistics of Tasmania" after self-government was granted.

By the *Commonwealth and State Statistical Agreement Act 1924*, the Tasmanian Parliament ratified an agreement for the establishment of an office of the Commonwealth Bureau of Census and Statistics, such office to meet the statistical needs of the State Government; provision was made for the Deputy Commonwealth Statistician, a Commonwealth Officer, to hold at the discretion of the State Government, the title of State Statistician. The first officer appointed in this way was L. F. Giblin, M.C., D.S.O., who had previously been the State Government Statistician. (It was not till the late 1950's that similar arrangements were made in the other Australian States.)

Statistics from 1804

In the Archives Office of Tasmania, the following series are available:

- (i) Official "Blue Books" for period 1822-1855.
- (ii) "Statistical Account of Van Diemen's Land or Tasmania, 1804 to 1854" compiled by Hugh M. Hull (Office of the Colonial Secretary).

(iii) "Statistics of Tasmania"—annual publications from 1856 to 1922-23.

(iv) "Statistics of the State of Tasmania"—annual publications commencing 1923-24 and still being produced annually. (Copies of these volumes are held at the University Library, the State Library in Hobart and the Public Library in Launceston; volumes covering 1962-63 or 1963-64 can be purchased from the Tasmanian Office of the Commonwealth Bureau of Census and Statistics.)

Copies of publications listed from (ii) to (iv) inclusive are available at the Tasmanian Office of the Bureau.

Current Publications of the Tasmanian Office

The Tasmanian Office of the Commonwealth Bureau of Census and Statistics is engaged in a continuous publications programme, the statistics appearing in two forms: (i) *Printed*; (ii) *Mimeographed*.

In general, the mimeographed publications (which are obtainable free of charge) have been compiled to make information available at the earliest possible moment. Printed publications contain information in very much greater detail but, because of the inevitable delay imposed by manuscript preparation and the printing process, may be issued a year later than the period to which they refer. (The printed *Monthly Summary of Statistics* is an exception and the "lag" is no more than about two months.)

Printed Publications

The following table sets out details of all printed publications issued by the Tasmanian Office:

Printed Publications Issued by the Tasmanian Office

Title	Frequency	Latest Issue (at 31.12.66)	Price	
			Excluding Postage (\$)	Including Postage (\$)
Tasmanian Year Book	Annual	1967	1.00	1.32
Monthly Summary of Statistics	Monthly	(a)	0.15	0.19
Pocket Year Book of Tasmania	Annual	1966	0.15	0.19
Statistics of the State of Tasmania—				
Demography	Annual	1964	0.60	0.67
Trade and Shipping	Annual	1963-64	0.40	0.44
Primary Industries	Annual	1964-65	0.70	0.77
Secondary Industries	Annual	1963-64	0.60	0.67
Public Finance	Annual	1964-65	0.40	0.44
Local Government Finance	Annual	1964-65	0.20	0.24
Social	Annual	1965	0.20	0.24
Statistical Summary	Irregular	1962-63	0.40	0.44
Bound Volume of all Parts of Statistics of the State of Tasmania	Annual	1963-64	2.50	2.75

(a) Published one to two months after the most recent month for which figures are available.

Mimeographed Publications

The next table gives details of all mimeographs produced by the Tasmanian Office:

Mimeographed Publications Issued by the Tasmanian Office (Free of Charge)

Subject Matter	Title of Publication	Frequency
Alcoholic Liquor	Wholesale Sales and Stocks of Wine and Spirits; Consumption of Alcoholic Liquor	Annual
Building	Building Approvals Building Statistics	Monthly Quarterly
Insurance	Fire, Marine and General Insurance	Annual
Population	Population in Local Government Areas .. Vital and Population Statistics	Annual Quarterly
Production (General)	Production Statistics Meat Production	Monthly Annual
Production (Primary)	Apple Production Crops Dairy Industry Hop Production Livestock Livestock and Wool Production (Preliminary Figures) Number of Farms, Farm Population, Employment, Irrigation and Machinery Used .. Potato Production Poultry Slaughtering and Chicken Hatching .. Tractors on Rural Holdings Value of Production (Primary) Wool Production Statistics	Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual
Production (Secondary)	Factory Production Sawmill and Plywood Mill Statistics	Annual Monthly
Statistics of Individual Municipalities	Compendium of Municipal Statistics ..	Irregular (Last Issue, 1964)
Trade	Trade (Oversea) Trade (Oversea and Interstate) by Sea and by Air	Annual Annual
Transport and Traffic	Motor Vehicle Registrations Road Traffic Accidents	Monthly Monthly

TASMANIAN STATISTICS IN CENTRAL OFFICE PUBLICATIONS

General

Although publications of the Tasmanian Office of the Bureau of Census and Statistics make available statistics on many aspects of the State, there are some fields in which additional or more frequent information is available in publications of the Central Office.

How to Obtain Central Office Publications

Central Office printed publications may be *bought* direct from the Government Printer, Canberra and from the Tasmanian Office of the Bureau of Census and Statistics; they may also be ordered from leading booksellers in the principal centres. A standing order may be placed with the Government Printer, Canberra, with whom a credit account may be arranged.

In addition to printed publications for which a charge is made, there are other Central Office publications (mimeographed, &c.) which may be obtained free of charge from the Commonwealth Statistician, Canberra.

Subject Matter of Central Office Publications

The fields of statistical enquiry covered in Central Office publications are very wide and the best way to obtain a guide to the material available is to write to: "*The Commonwealth Statistician, Canberra*" and ask for "*Publications of the Commonwealth Bureau of Census and Statistics*". Copies of this guide are also available at the Tasmanian Office of the Bureau. This free 40-page guide lists the publications of the Central Office and of the State Offices; in addition, it contains a subject index.

Readers with interest in a particular field are invited to call at, or write to, the Tasmanian Office which is in a position to give advice on what publications are available.

Listing of all Central Office publications is beyond the scope of this Appendix but attention is called to the Population Census Volumes (Volume VI, Tasmania, 1961 Census); the Official Year Book of the Commonwealth of Australia; Secondary Industries Bulletin; Demography Bulletin; Finance Bulletin; Labour Report; National Income and Expenditure; Oversea Trade Bulletin; Primary Industries Bulletins; Transport and Communication Bulletin. In addition to annual publications, there is a very wide range of information released monthly, quarterly and half-yearly.

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